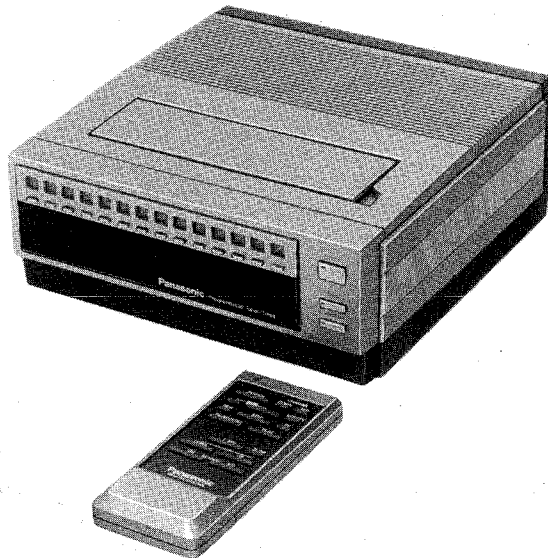


Service Manual

Programmable Tuner/Timer Unit

Panasonic
 Omnivision **VHS**
PV-A500
Vol. 6
**Programmable Tuner/Timer Unit &
Wireless Remote Control**


SPECIFICATIONS

Power Source:	120 VAC $\pm 10\%$, 60 Hz $\pm 0.5\%$
Power Consumption:	Approx. 36 W DC out 12 V 1.2 A
Television System:	EIA Standard (525 lines, 60 field)
Timer:	2 weeks/4 programs programmable timer
Input:	VHF Ch2-Ch13, Cable channels "A"—"W" 75 Ω unbalanced UHF Ch14-Ch83, 300 Ω balanced RF (Ch3 or Ch4)
Output:	Video: (Multi connector) 1.0 Vp-p, 75 Ω unbalanced Audio: (Multi connector) -6 dB, 600 Ω unbalanced
Operating Temperature:	32°F ~ 104°F (0°C ~ 40°C)
Operating Humidity:	10% ~ 75%
Weight:	8.2 lbs (3.7 kg)
Dimensions:	9-3/8"(W) $\times$ 3-5/8"(H) $\times$ 9-3/4"(D) 238(W) $\times$ 92.5(H) $\times$ 245(D) mm

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are shaded on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

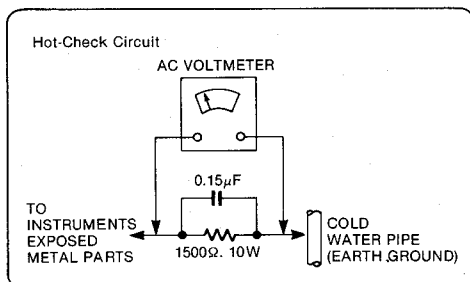


Figure 1

LEAKAGE CURRENT HOT CHECK (See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedures which may be required for electronic circuits of ELECTRONIC PROGRAMMABLE TIMER/TUNER UNIT.

1. Test Equipment

To perform the electrical adjustments completely, the following equipment is required.

1. DVM (Digital Volt Meter)
Voltage Range: 0.01 - 50V
2. Frequency Counter
Frequency Range: 0 - 10MHz
3. DC Voltage Supply (0 - 20V)
4. Dual-Trace Oscilloscope
Voltage Range: 0.05 - 50V/Div.
Frequency Range: DC - 10MHz
Probes: 10:1, 1:1
5. Signal Generator
Sinewave: 0 - 10MHz
6. TV Channel Signal Generator
7. DC Amperemeter
Current Range: 0 - 10A
8. VIF Sweep & Trap Generator
9. Spectrum Analyzer
10. Color TV Receiver or Monitor
11. Attenuator ($\pm 0\text{dB}$ - -60dB)
12. Monitor Scope
13. Non-metallic Screwdriver (Using TV Demodulator Section) and Plastic Tip Driver.

2. Adjustment Procedures

These adjustment procedures are for the following four sections.

1. Power Supply Section
2. TV Demodulator Section
3. Programmable Timer Section
4. IR Remote Receiving Detector Section

2-1. Power Supply Section

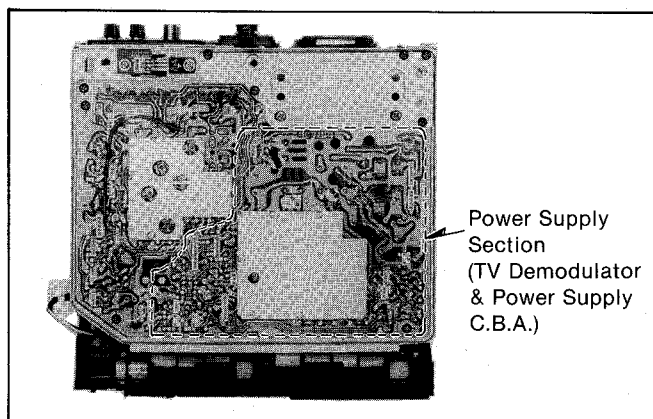


Fig. E1

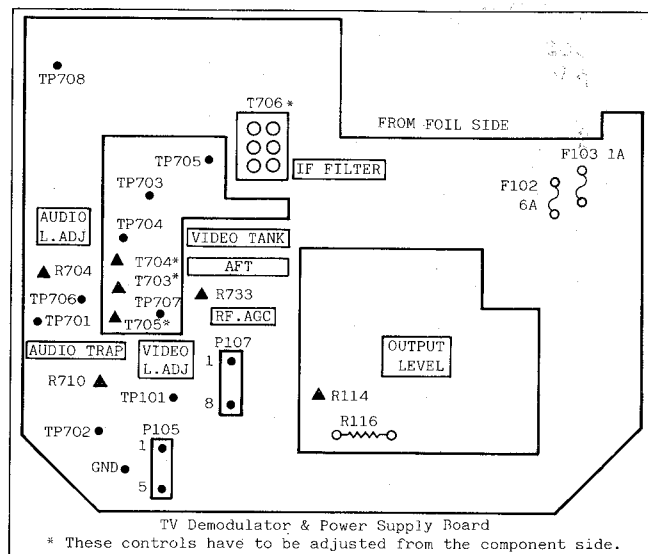


Fig. E2

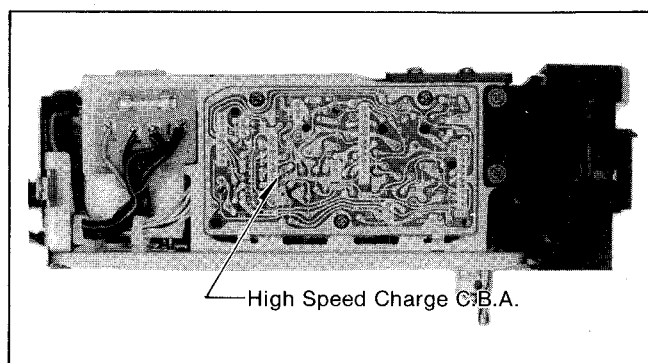


Fig. E3

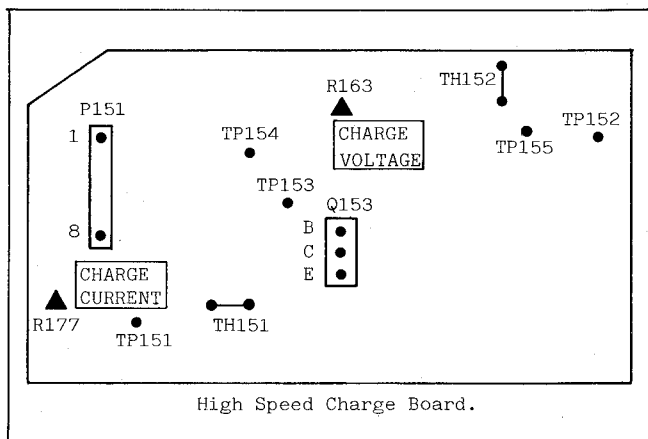


Fig. E4

2-1-1. Charge Voltage Adjustment

Test Point: TP101

Adjustment: R163 (Charge Voltage)

1. Don't connect the Multi-connector and check the AC input voltage for 120V AC.
2. Connect a 30-50k Ω resistor in parallel with R116 in the Power Supply Section.

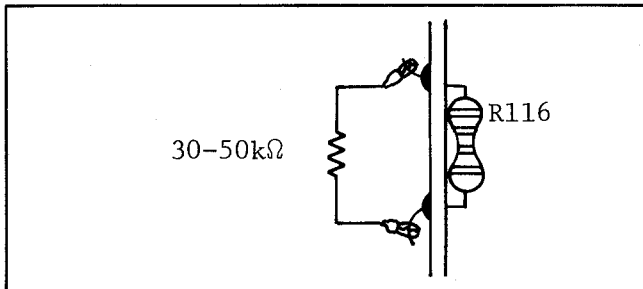


Fig. E5

3. Unsolder the thermistor (TH151) and connect a 3.3k Ω resistor to the thermistor connection points on the High Speed Charge Board.
4. Connect a jumper wire between the base and the emitter of Q153.

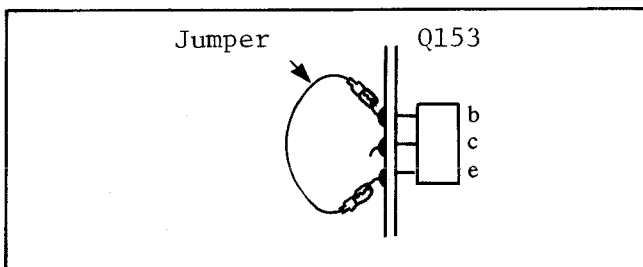


Fig. E6

5. Turn the tuner power switch "ON".
6. Connect the DVM to TP101 in the Power Supply Section.
7. Connect the scope to TP153 on the High Speed Charge Board.
8. Turn the Charge Voltage (R163) counterclockwise from the component side.
9. Adjust the OUTPUT LEVEL (R114) so that the voltage at TP101 is 15.7 V, ± 0.03 V.
10. Slowly turn the Charge Voltage (R163) clockwise until the voltage at TP153 starts to drop.
11. Adjust the OUTPUT LEVEL (R114) so that the voltage at TP101 is 15.60 V, ± 0.03 V.
12. Turn the tuner power switch off, then back on again.

13. Confirm that the voltage at TP153 is High.
14. Confirm that the voltage at TP153 is Low when the voltage at TP101 is 15.60V, ± 0.03 V.
15. Perform 2-1-2 +13V DC Adjustment.

2-1-2. +13V DC Adjustment

Test Point: TP101

Adjustment: R114 (OUTPUT LEVEL)

1. Don't connect the Multi-connector to the deck.
2. Confirm that the AC input voltage is 120V AC.
3. Connect the DVM to TP101 in the Power Supply Section.
4. Adjust the OUTPUT LEVEL (R114) so that the voltage is 13.0V DC, ± 0.2 V DC.

2-1-3. Charge Current Adjustment

Test Point: P107-Pins 1 and 2.

Adjustment: R177 (Charge Current)

1. Don't connect the Multi-connector to the deck.
2. Confirm that the AC input voltage is 120V AC.
3. Connect the DC Amperemeter and a battery as shown below.

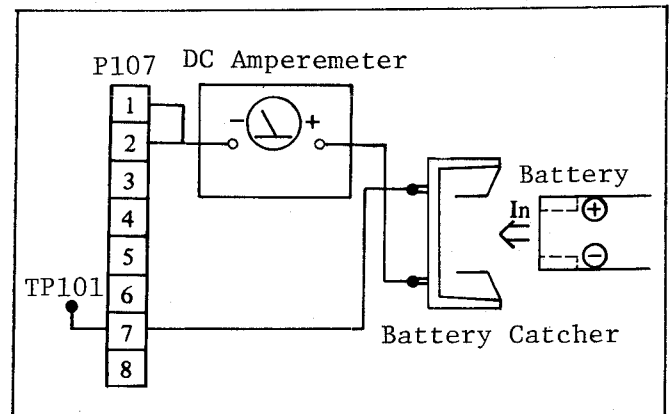


Fig. E7

The output voltage of the battery should be about 10.25V DC. It can be done by the following process.

- 3-(1) Discharge the battery by using the VCR which has already had performed the Under Cut Adjustment.
- 3-(2) The VCR automatically turns into the STOP mode, because the Under Cut function works.
- 3-(3) At this time the output voltage of the battery is approximately 10.3V DC.

4. Connect the scope to TP153 on the High Speed Charge Board.
5. Confirm that the voltage at TP153 is High (15V - 16V).
6. Adjust the Charge Current (R177) so that the current is 1.0A, $\pm$ 0.05A.

2-2. TV Demodulator Section

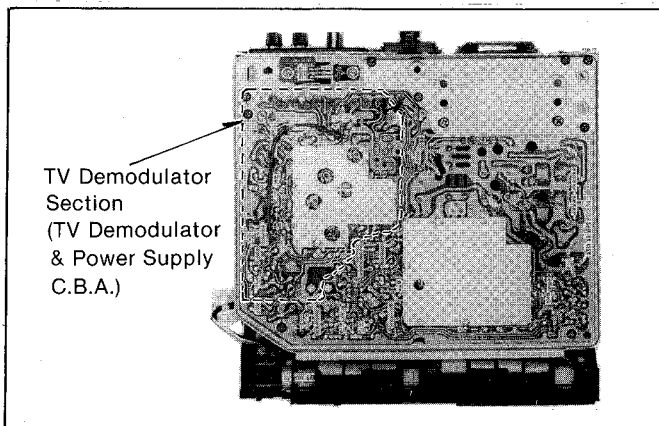


Fig. E8

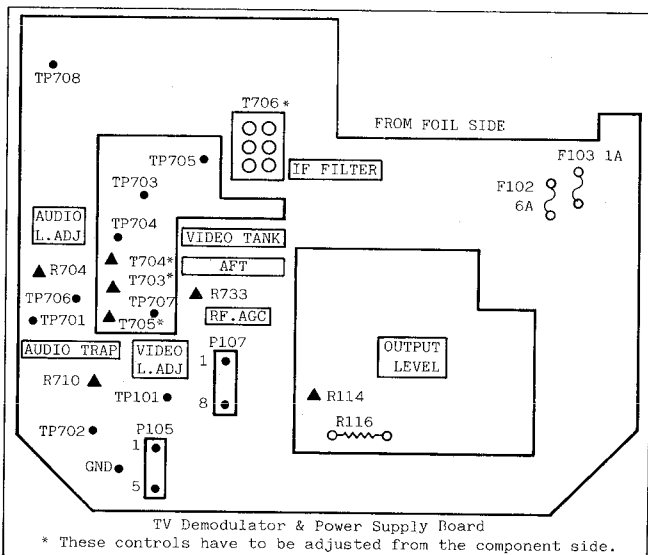


Fig. E9

2-2-1. 45.75MHz Tuning Coil Adjustment

Test Point: TP706

Adjustments: T703 (AFT)

T704 (VIDEO TANK)

1. Connect the VIF Sweep Generator, Trap Adjuster and Monitor Scope as shown below.

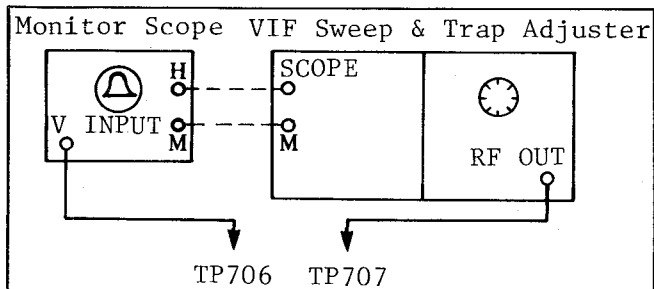


Fig. E10

2. Connect the output of the VIF Sweep Generator to TP707 on the TV Demodulator Section.
3. Connect the V Input of the scope to TP706 on the same section.
4. Connect the DC Power Supply to TP705 on the same board, and set the Voltage of DC Power Supply not to appear as noise on waveform. (less than 10V DC)
5. Adjust the sweep output so that the level of sweep waveform is 0.1Vp-p.
6. Remove the core of T703.
7. Adjust the VIDEO TANK (T704) so that the marker portion of 45.75 MHz becomes maximum as shown below.

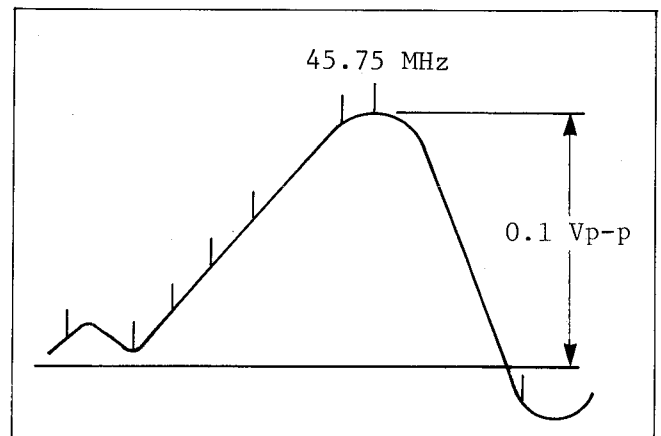


Fig. E11

8. After VIDEO TANK (T704) adjustment, adjust AFT (T703) so that the marker portion of the marker 45.75 MHz portion is as shown below.

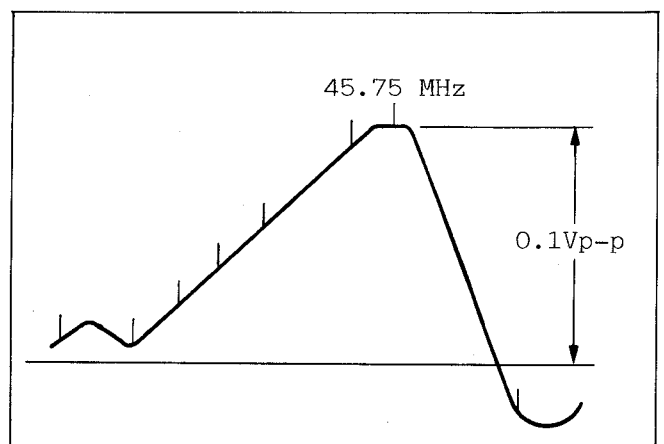


Fig. E12

9. After 45.75MHz Tuning Coil Adjustment, make AFT Trans Adjustment.

2-2-2. VIF Overall Adjustment

Test Point: TP706

Adjustments: T705 (AUDIO TRAP)
T706 (IF FILTER)

1. Connect the VIF Sweep, Trap Adjuster and Monitor scope as shown below.

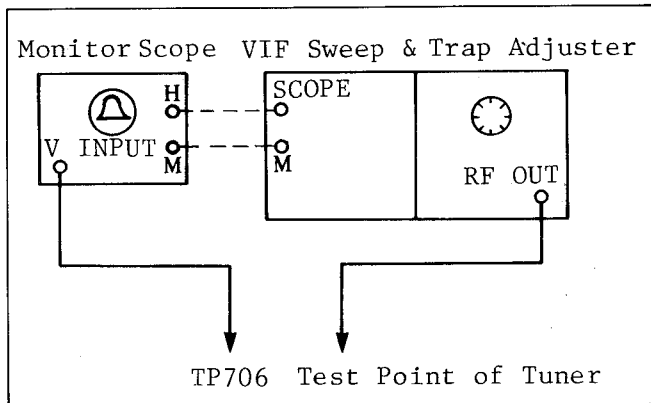


Fig. E13

2. Connect the output of the VIF Sweep Generator to tuner test point.
3. Connect the V Input of the Monitor scope to TP706 on the TV Demodu-
4. Control to Channel 13.
5. Connect a jumper between TP703 and TP704 through a resistor 100Ω.
6. Connect a jumper between TP709 and GND.
7. Connect the DC Power Supply to TP705.
- 7-(1) Set the Voltage of DC Power Supply so that the waveform level is maximum.
- 7-(2) If the peak portion of the waveform isn't clean, decrease the output of the VIF Sweep Generator until the peak portion is clean.
- 7-(3) Repeat about step 7-(1) and 7-(2) a couple of times till the waveform level isn't changes.

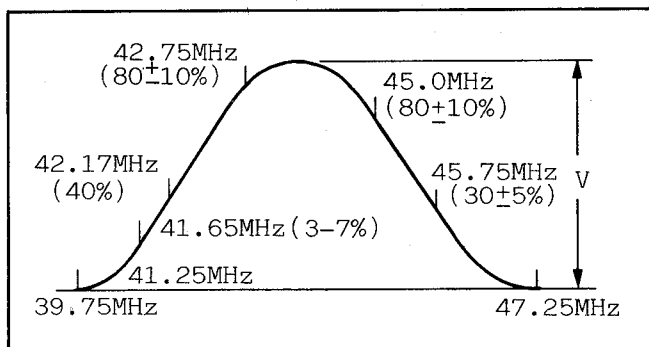


Fig. E14

8. Adjust the output of the VIF Sweep Generator so that the V level is 1.0Vp-p.
9. Increase the VIF Sweep Generator output by 25dB.
10. Adjust the DC Voltage Regulator so that the V portion becomes 1.0Vp-p.
11. Set the Trap Keying Switch (41.25MHz) on the VIF Sweep Generator.
12. Adjust the AUDIO TRAP (T705) so that the 41.25MHz trap becomes minimum.

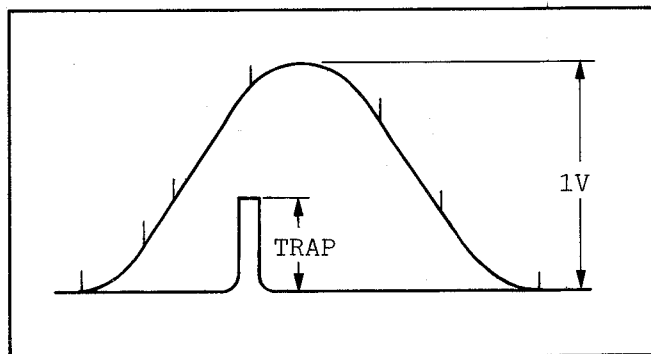


Fig. E15

13. Set the Trap Keying Switch (47.25 MHz) on the VIF Sweep Generator.
14. Adjust the IF FILTER (T706)-(1) so that the 47.25MHz trap becomes minimum.

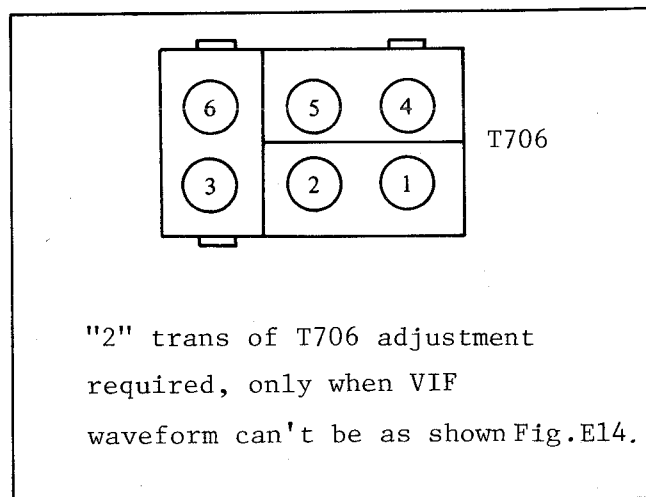


Fig. E16

15. Set the Trap Keying Switch (39.75 MHz) on the VIF Sweep Generator.
16. Adjust the IF FILTER (T706)-(2) so that the 39.75MHz trap becomes minimum.

- Adjust the tuner converter trans on the VHF tuner and (3), (4), (5) and (6) trans of T706 so that the sweep output waveform becomes as shown Fig.E14.

2-2-3. AFT Trans Adjustment

Test Point: Test Point of Tuner

Adjustment: T703 (AFT)

- Tune in a local on-air TV program. (Using Channel 4)
- Connect the frequency counter to tuner test point. (On the UHF/VHF Tuner)
- Set the AFT switch on the preset panel is "OFF".
- Adjust the tuning control so that the frequency is $113.0 \pm 0.01\text{MHz}$.
- Set the AFT switch on the preset panel is "ON".
- Adjust the AFT (T703) so that the level at the tuner test point becomes $113.0 \pm 0.005\text{MHz}$.

2-2-4. Burst Level Adjustment

Test Point: TP702

Adjustment: R710 (VIDEO LEVEL)

- Supply the NTSC standard color bar signal to RF IN terminal and tune this signal.
- Connect the scope to TP702.
- Confirm that the video level at TP702 is $1.0 \pm 0.2\text{Vp-p}$.
- Adjust the VIDEO LEVEL (R710) so that the burst level becomes $22 \pm 1\%$ of video level.

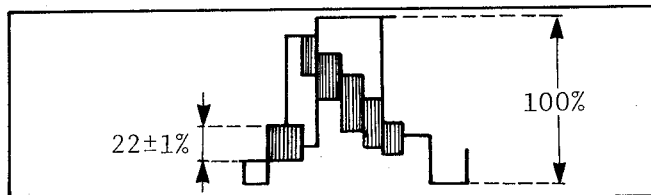


Fig. E17

2-2-5. SIF Input Trans (4.5MHz TRAP) Adjustment

Test Point: TP708

Adjustment: T701 (4.5MHz TRAP)

- Tune in a local on-air TV program. (Using free channel)
- Connect the scope to TP708 on the TV Demodulator section.

- Adjust the 4.5MHz TRAP (T701) so that the level becomes maximum.

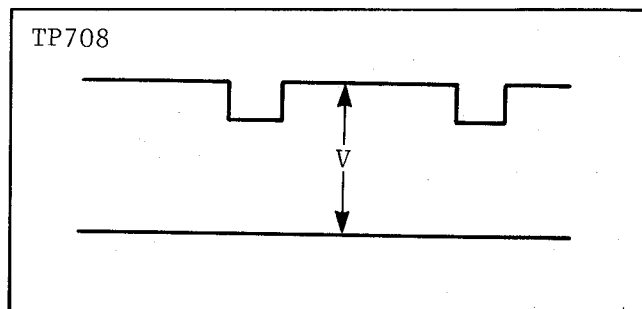


Fig. E18

2-2-6. Audio Level Adjustment

Test Point: TP701

Adjustment: R704 (AUDIO LEVEL)

- Supply an audio signal of 400Hz with 30% modulated frequency to the RF input on the rear panel. (Using the TV Channel Signal Generator)
- Connect the scope between TP701 and GND.
- Adjust the AUDIO LEVEL (R704) so that the level is $133 \pm 20 - 30 \text{ mVp-p}$.

2-2-7. RF AGC Adjustment

Test Point: TP709

Adjustment: R733 (RF AGC)

- Tune in a color bar signal (VHF).
- Set the AFT switch to "ON" position.
- Set the input level of electric field to $65 \pm 2\text{dB}$. (Using the Attenuator and Spectrum Analyzer)
- Connect the scope to TP709 on the TV Demodulator Section.
- Tune the RF AGC (R733) fully counterclockwise from component side.
- Then slowly turn the RF AGC (R733) till just before the voltage drops.
- Change the input electric field from 65dB to 68dB.
- Confirm that the voltage at TP709 is dropped more than 1.0V.

2-3. Programmable Timer Section

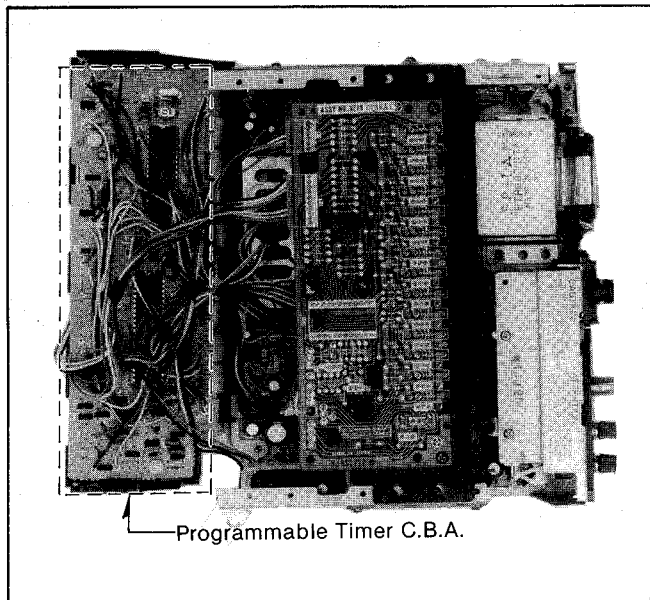


Fig. E19

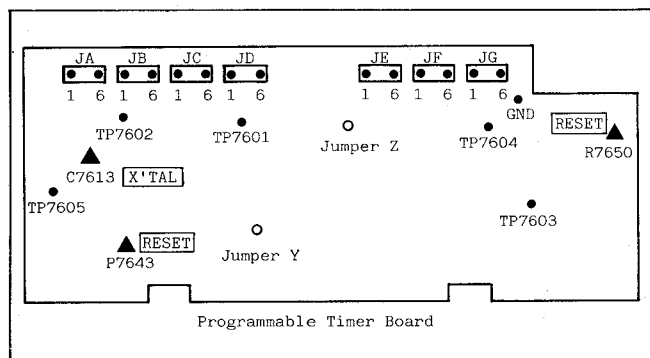


Fig. E20

2-3-1. Reset Voltage (TIMER CPU) Adjustment

Test Point: TP7601

Adjustment: R7643 (RESET)

1. Disconnect the AC plug from the AC outlet.
2. Disconnect the connectors (P105 and P780) from Power Supply Section and Timer Backup board.
3. Connect the DC Voltage Regulator to Jumper Y and Z on the Timer board.

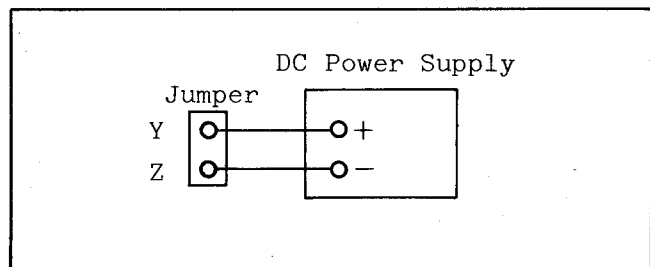


Fig. E21

4. Connect the DVM to TP7605 on the same board.
5. Adjust the DC Voltage Regulator so that the voltage on TP7605 is $4.2 \pm 0.05V$ DC.
6. Connect the DVM to TP7601 on the Timer board.
7. Turn the RESET (R7643) fully clockwise from the component side.
8. Then, slowly adjust the RESET (R7643) counterclockwise from the component side and set the point at which the voltage is suddenly increased.
9. Then, set the voltage of DC Voltage Regulator to $4.0 \pm 0.05V$ and confirm that the reset action does operate.

2-3-2. Reset Voltage (SERIAL DECODER) Adjustment

Test Point: TP7603

Adjustment: R7650 (RESET)

1. Disconnect the AC plug from AC outlet.
2. Disconnect the connectors (P105 and P780) from Power Supply Section and Timer Backup board.
3. Connect the DC Voltage Regulator to TP7606 and set the voltage to $4.5 \pm 0.05V$ DC.
4. Connect the DVM to TP7603 on the same board.
5. Turn the RESET (R7650) center position.
6. Then, slowly adjust the RESET (R7650) C.W. or C.C.W. and set the point which the voltage at TP7603 is suddenly increased.
7. Then, set the voltage of the DC Voltage Regulator to $4.3 \pm 0.05V$ and confirm that the reset action does operate.

2-3-3. X'tal OSC (4.19MHz) Adjustment

Test Point: TP7602

Adjustment: C7613 (X'TAL)

1. Connect the AC plug from the AC outlet.
2. Connect the frequency counter to TP7602 on the Timer board
3. Adjust the X'tal (C7613) so that the frequency is $128 \pm 0.001Hz$.

2-4. IR Remote Receiving
Detector Section

2-4-1. Tuning Coil Adjustment

- Test Point: Pin (3) of IC1
Adjustment: T1 (TUNING)
1. Connect the Signal Generator and Attenuator as shown below.

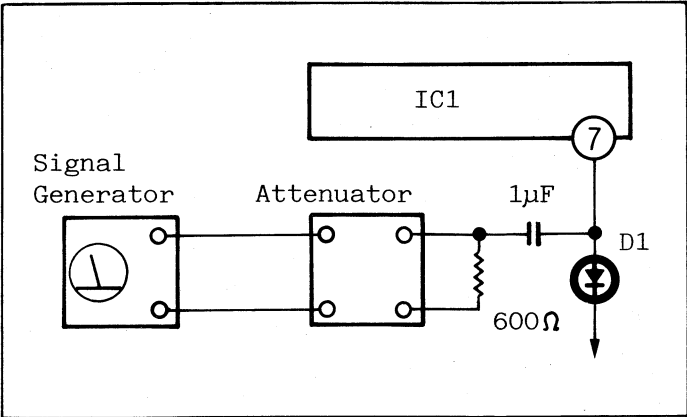
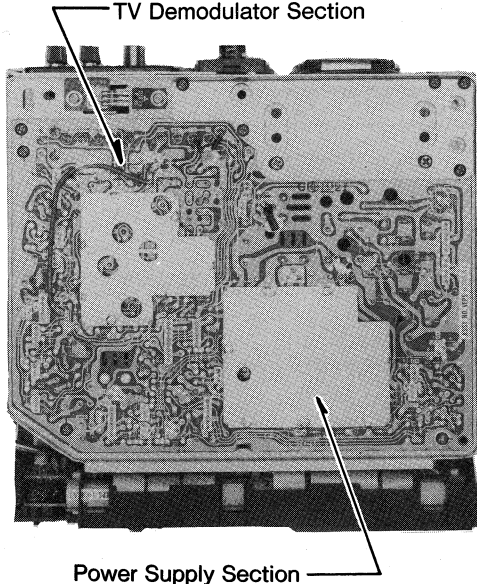
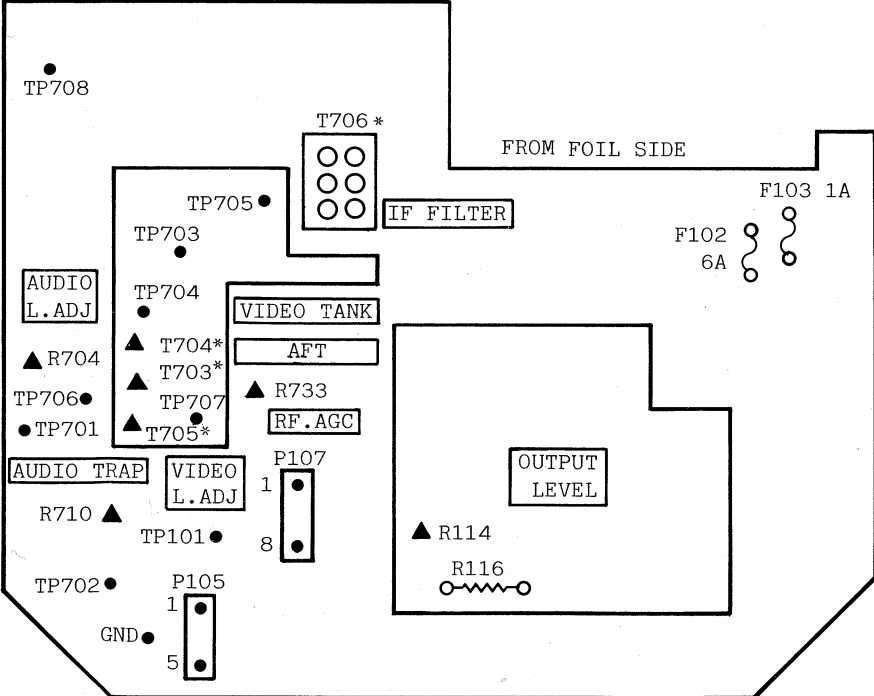
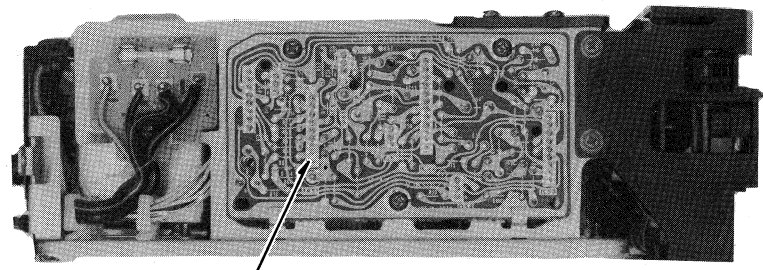
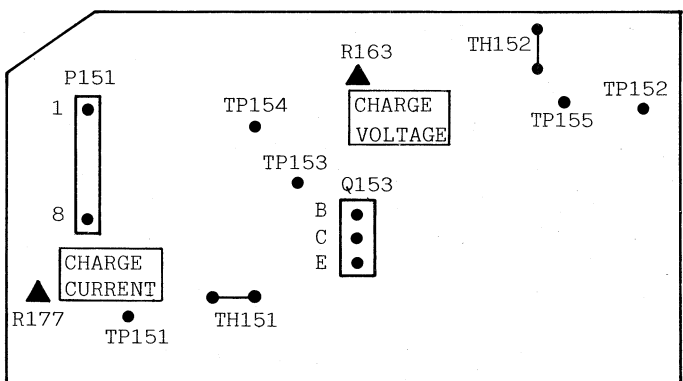


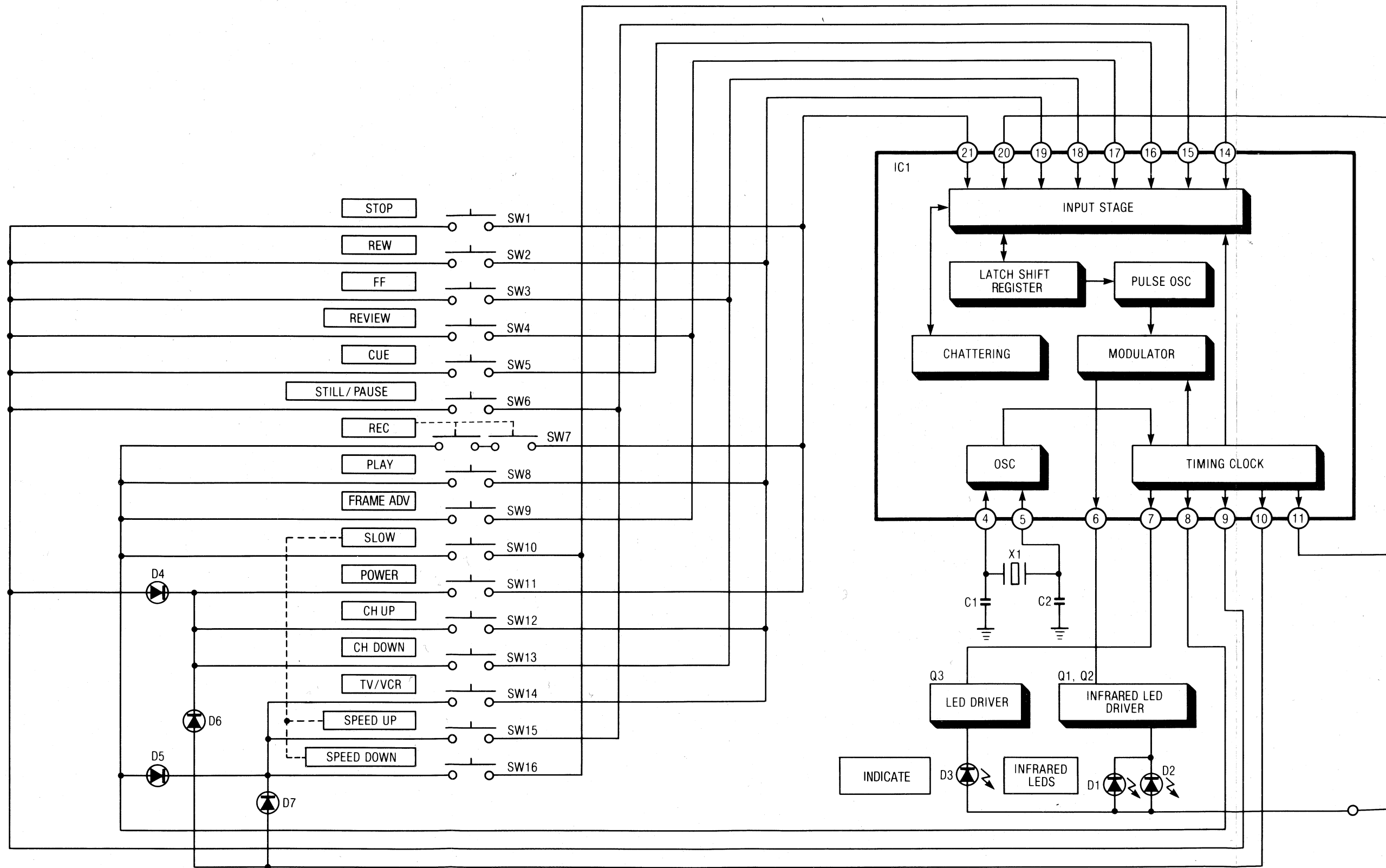
Fig. E22

2. Set the frequency of Signal Generator to 37.92kHz $\pm$ 30Hz.
3. Set the Attenuator to $\pm$ 0dB.
4. Connect the scope to Pin (7) of IC1 on the IR Remote Receiving Detector board.
5. Adjust the Signal Generator so that the voltage at Pin (7) of IC1 is 50mVp-p.
6. Set the Attenuator to -55dB.
7. Connect the scope to Pin (3) of IC1 on the Remote Receiving Detector board.
8. Adjust the TUNING (T1) so that the level at Pin (3) of IC1 is maximum.
9. Remove the Signal Generator, Attenuator and Frequency Counter.

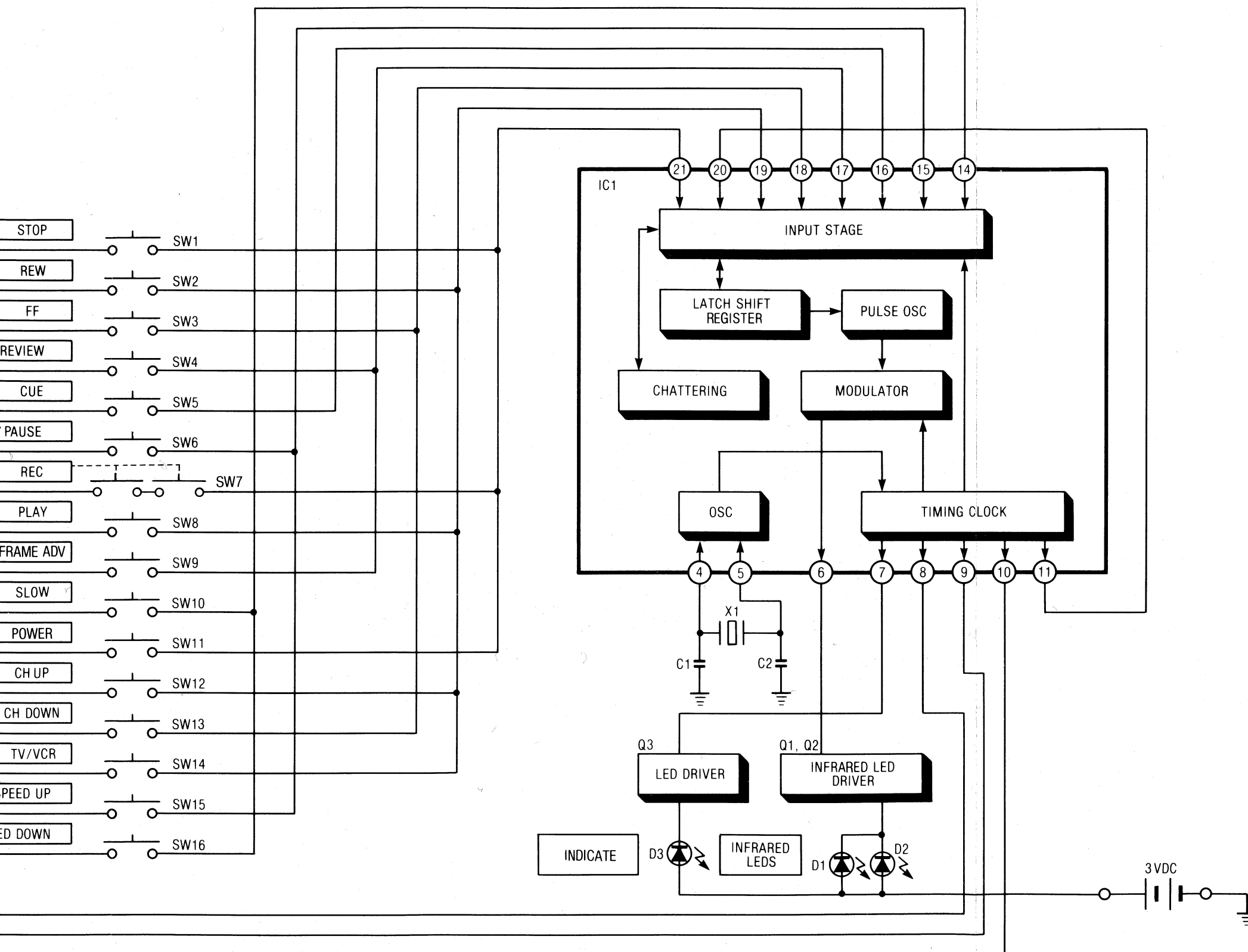
TV Demodulator & Power Supply C.B.A. (VEPS0735A1)	High Speed Charge C.B.A. (VEPS0123A)
 TV Demodulator Section Power Supply Section  TP708 TP705 TP703 TP704 TP706 TP707 TP701 TP702 TP101 TP105 GND P107 P105 R710 R704 T704* T703* T705* VIDEO TANK AFT R733 RF.AGC IF FILTER F102 6A F103 1A OUTPUT LEVEL R114 R116 AUDIO L.ADJ AUDIO TRAP VIDEO L.ADJ FROM FOIL SIDE TV Demodulator & Power Supply Board * These controls have to be adjusted from the component side.	 High Speed Charge C.B.A.  P151 TP154 TP153 TP152 TP155 R163 TH152 Q153 TH151 TP151 R177 CHARGE VOLTAGE CHARGE CURRENT High Speed Charge Board.

6-8 IR WIRELESS TRANSMITTER BLOCK DIAGRAM

IR WIRELESS TRANSMITTER BLOCK DIAGRAM

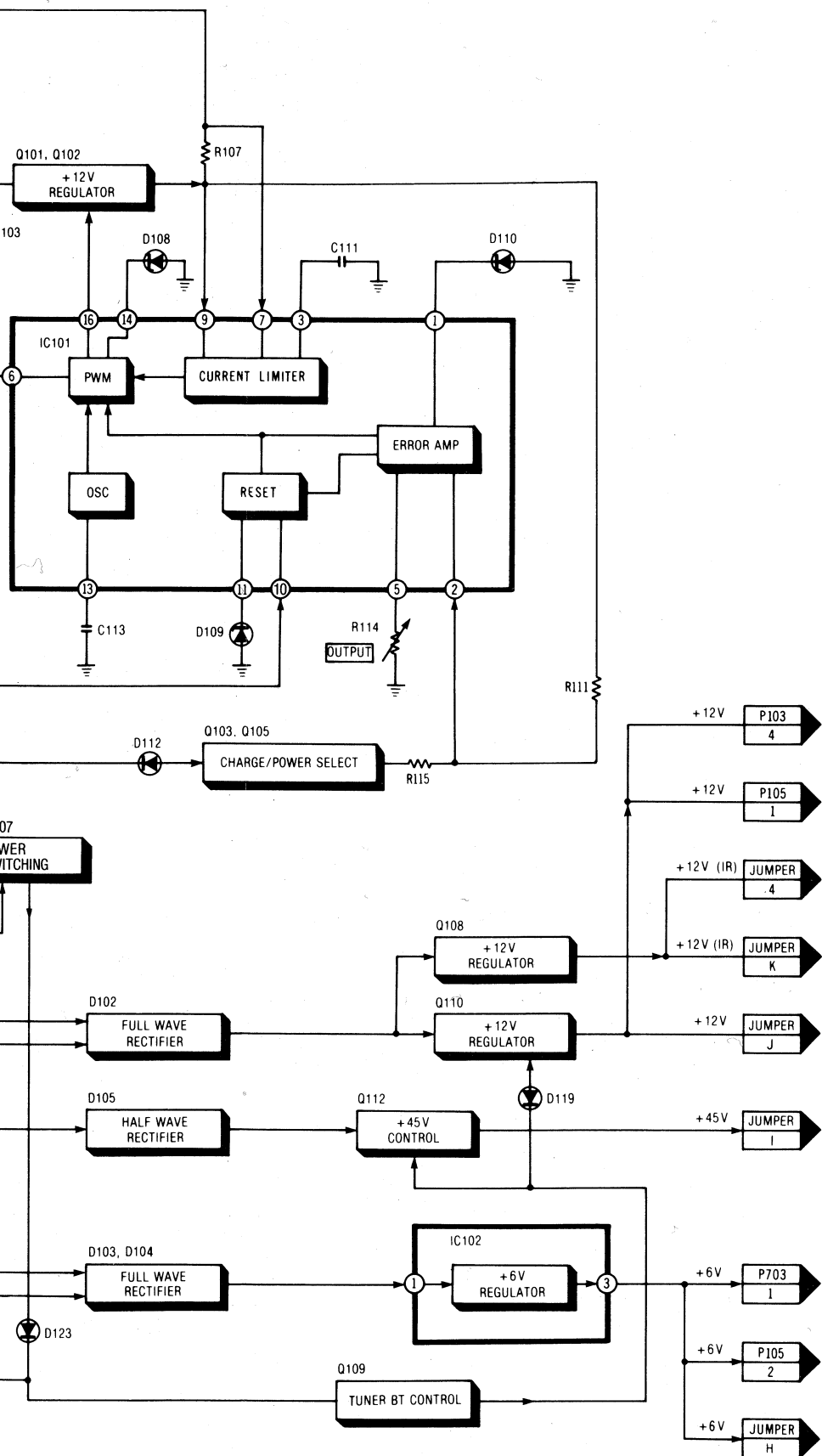


ER BLOCK DIAGRAM

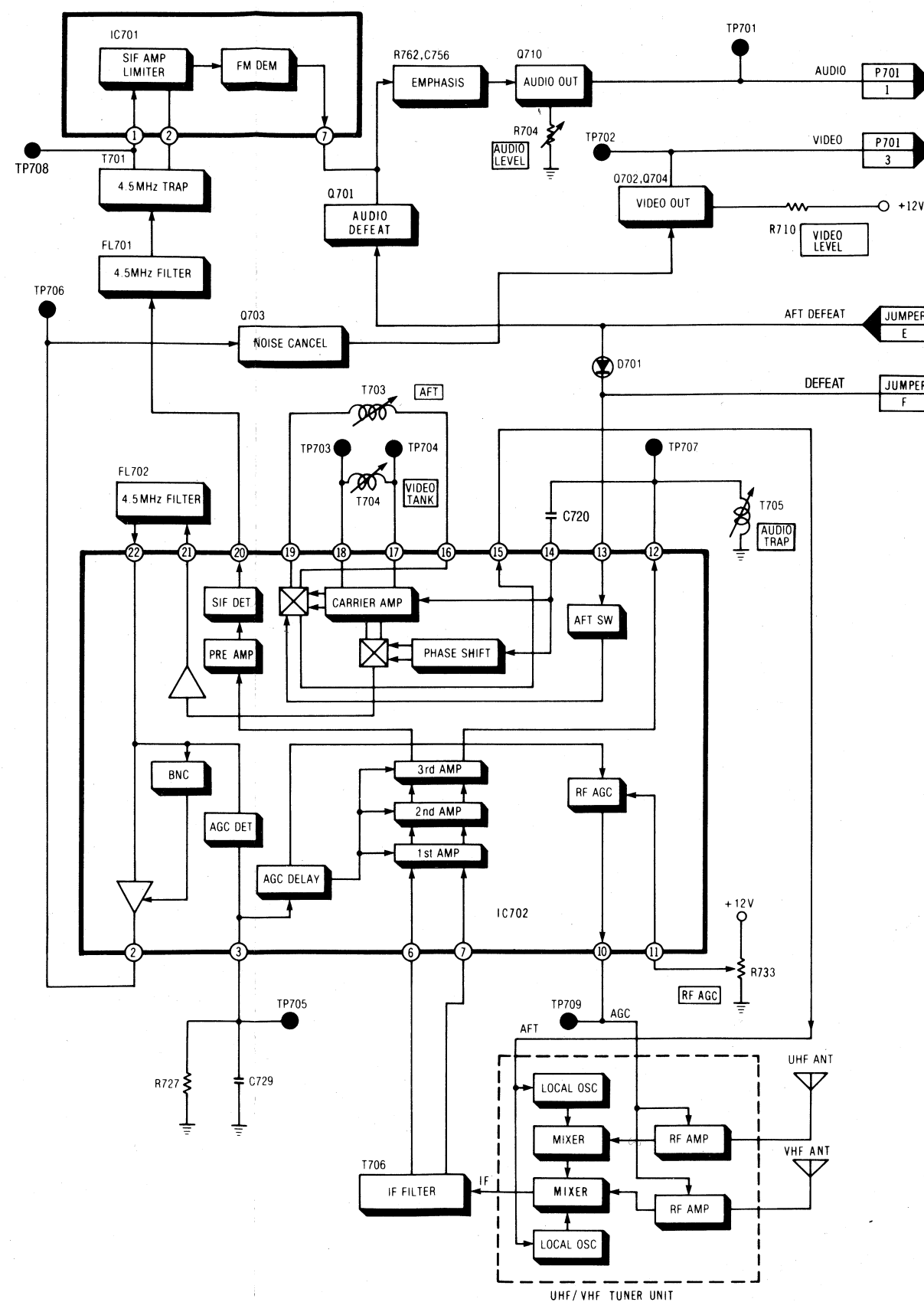




POWER SUPPLY BLOCK DIAGRAM

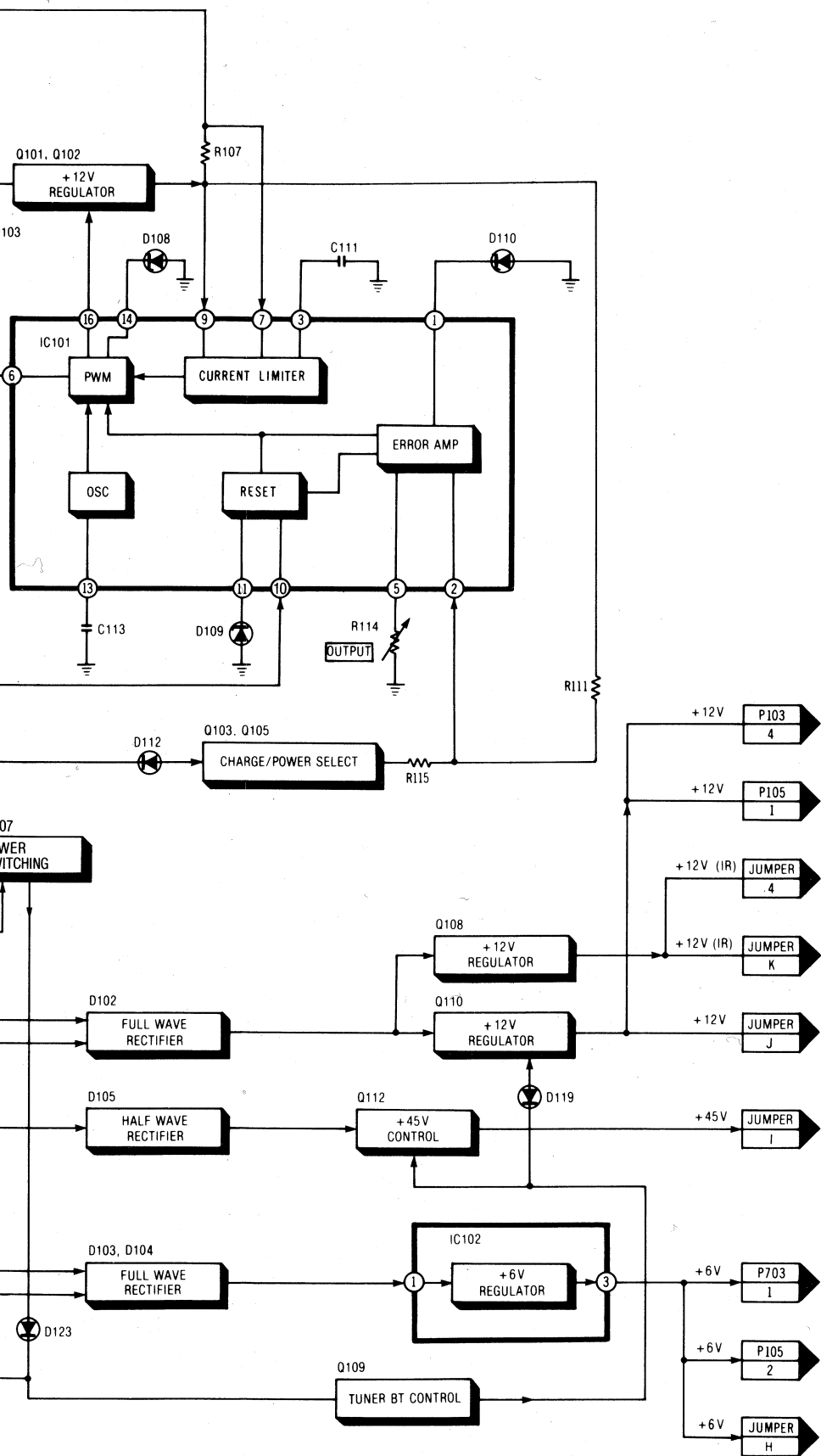


6-9 TV DEMODULATOR & POWER SUPPLY BLOCK DIAGRAM

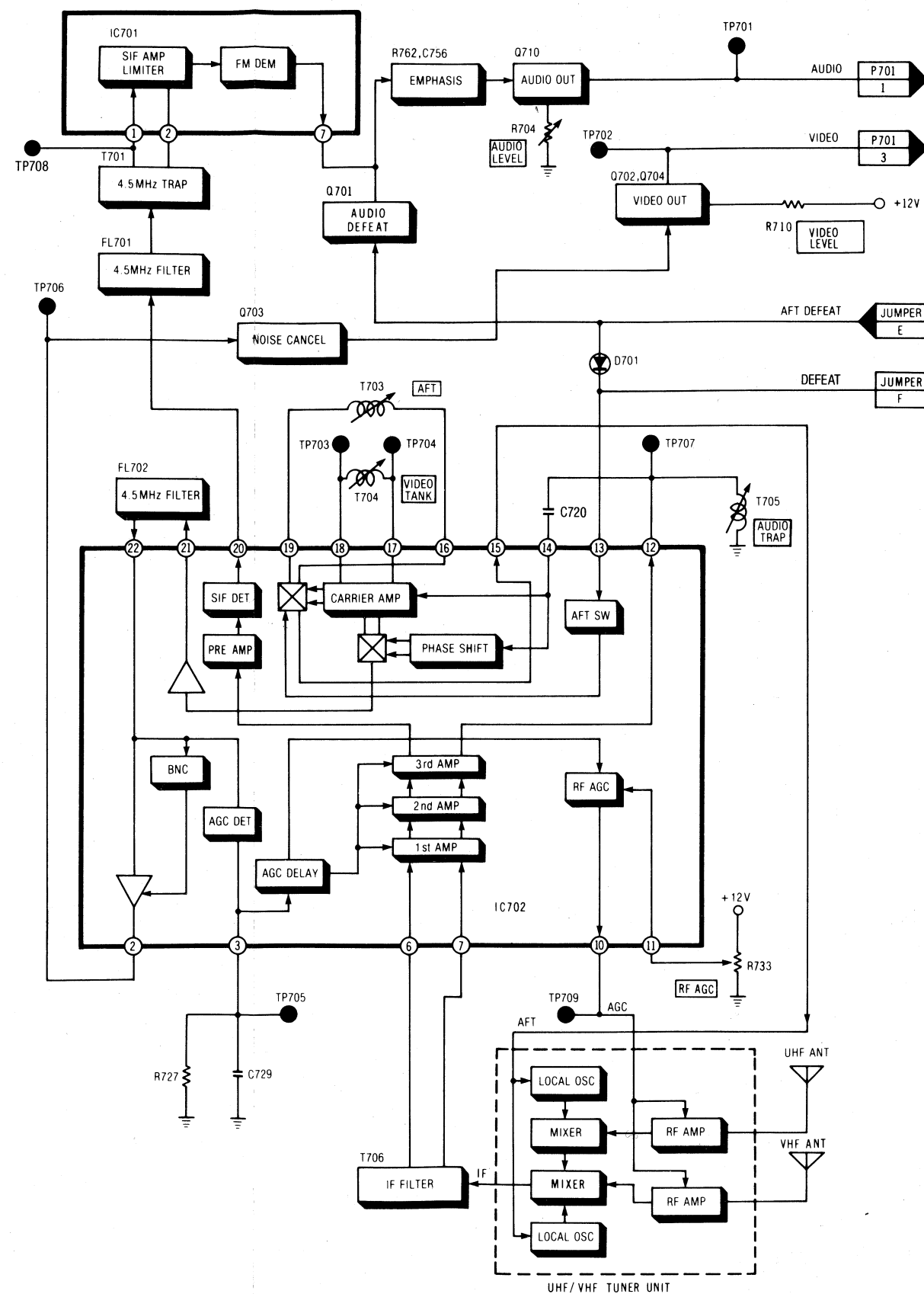


6-10 PROGRAMMABLE TIMER BLOCK DIAGRAM

POWER SUPPLY BLOCK DIAGRAM

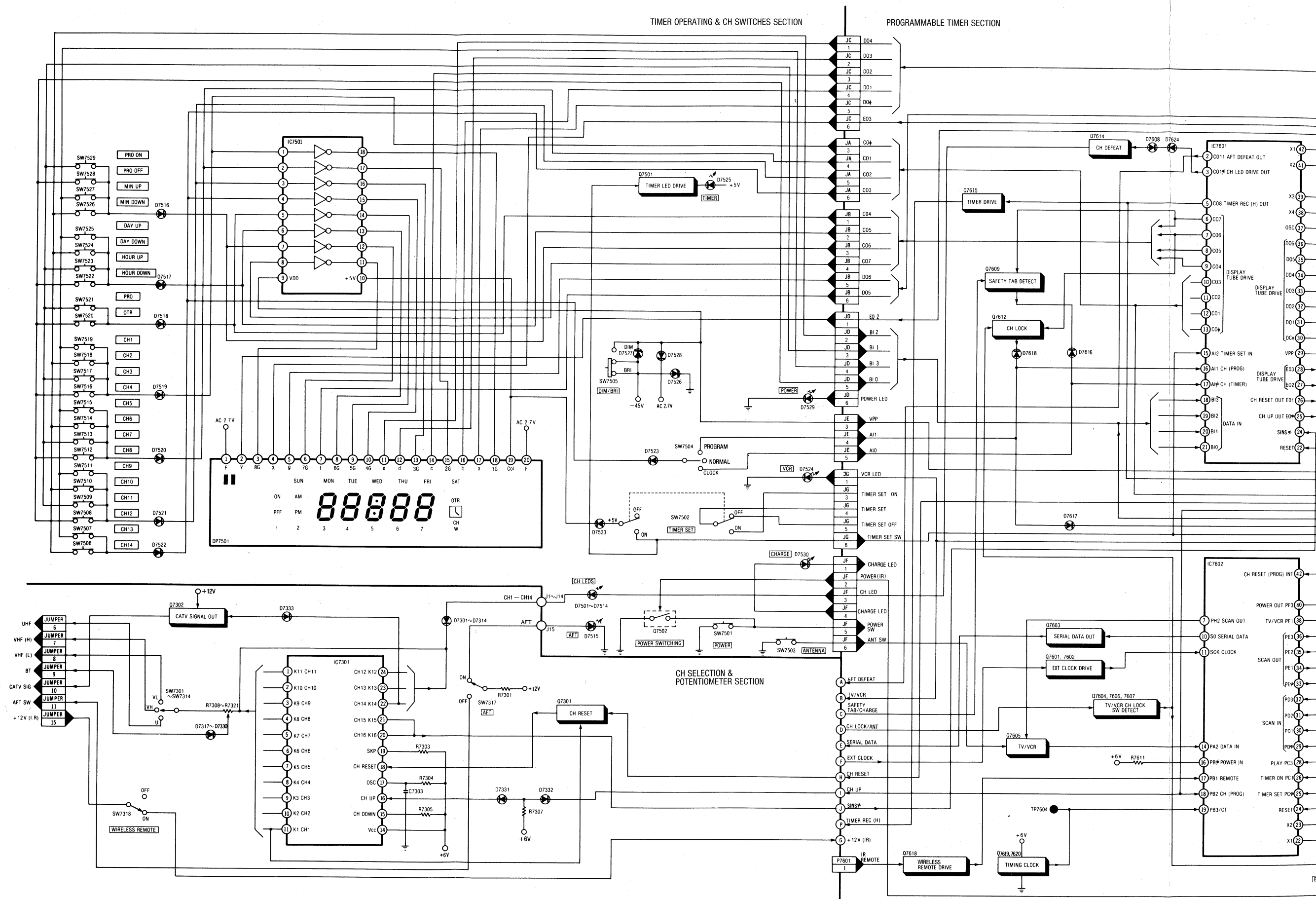


6-9 TV DEMODULATOR & POWER SUPPLY BLOCK DIAGRAM

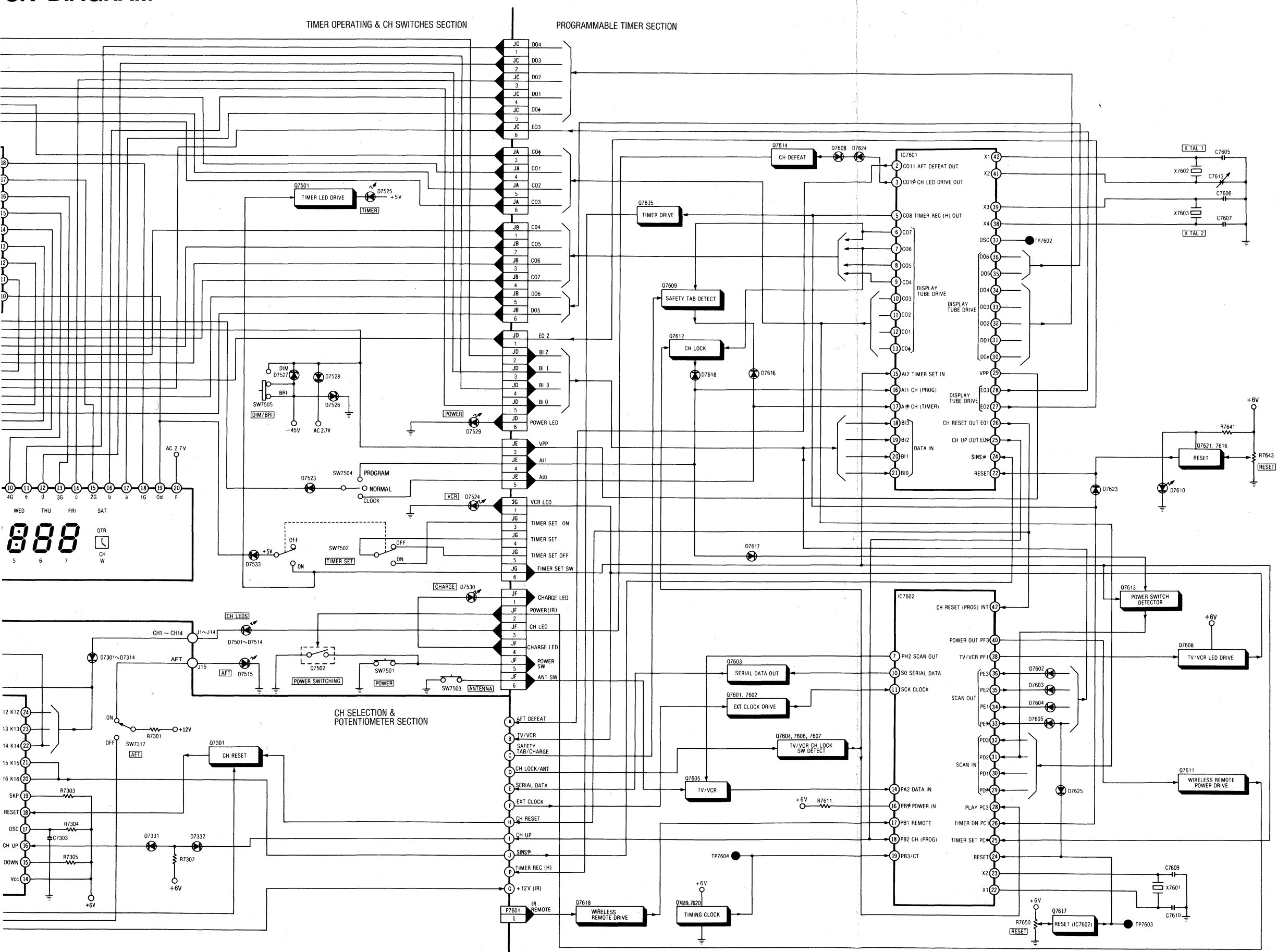


6-10 PROGRAMMABLE TIMER BLOCK DIAGRAM

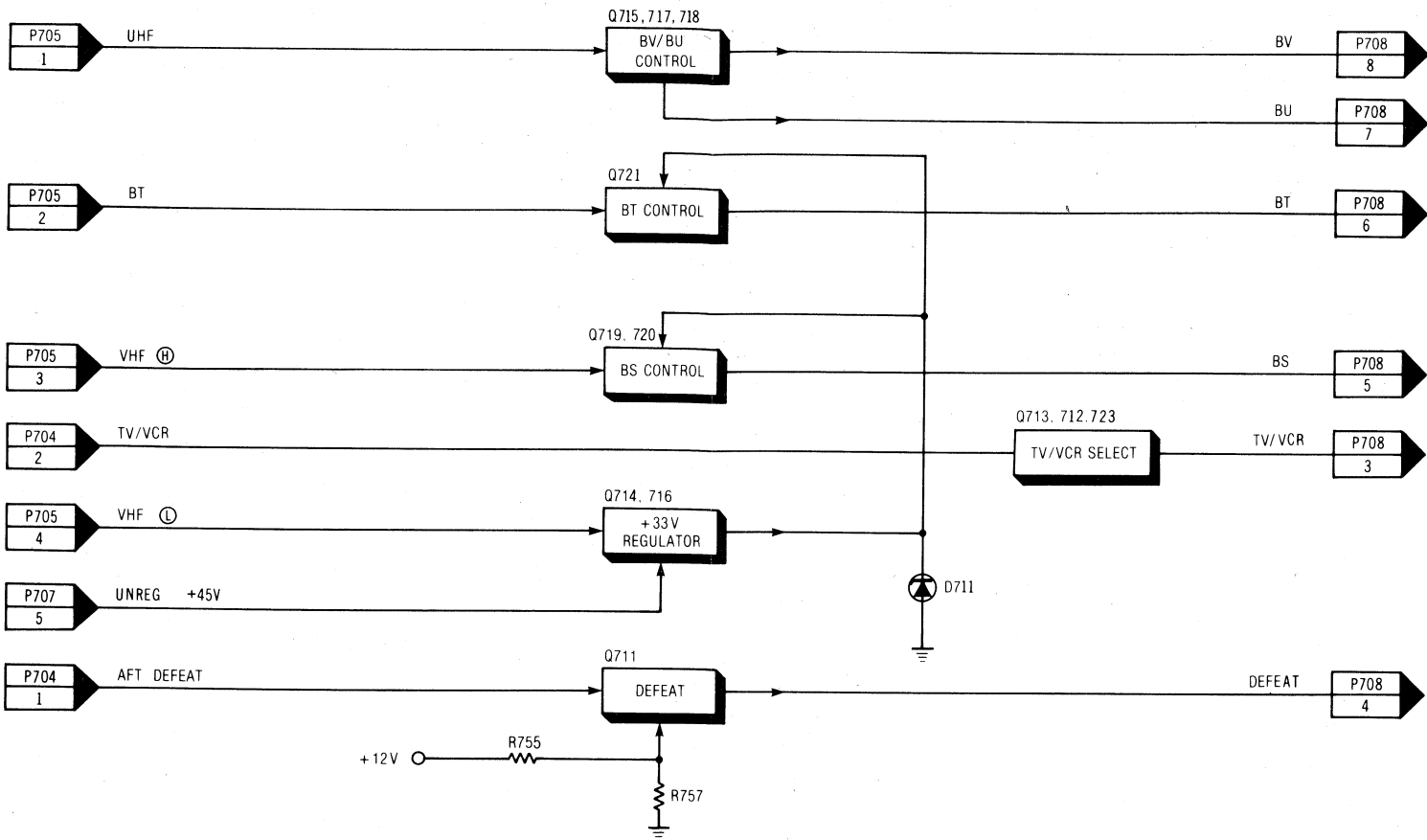
PROGRAMMABLE TIMER BLOCK DIAGRAM



LOCK DIAGRAM

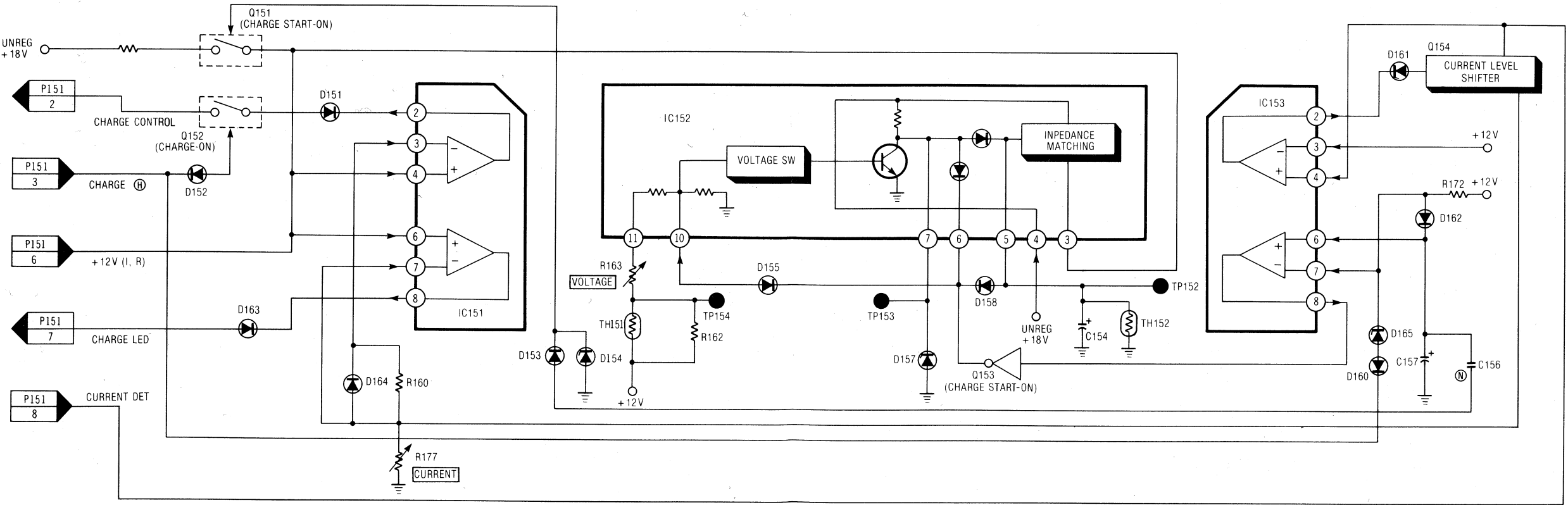


UHF/VHF TUNER POWER CONTROL BLOCK DIAGRAM

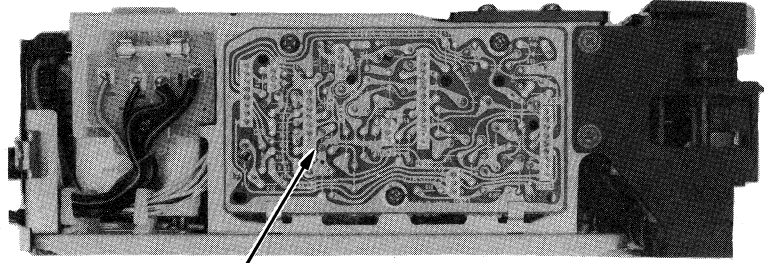


6-11
UHF/VHF TUNER POWER CONTROL
BLOCK DIAGRAM
HIGH SPEED CHARGE
BLOCK DIAGRAM

HIGH SPEED CHARGE BLOCK DIAGRAM

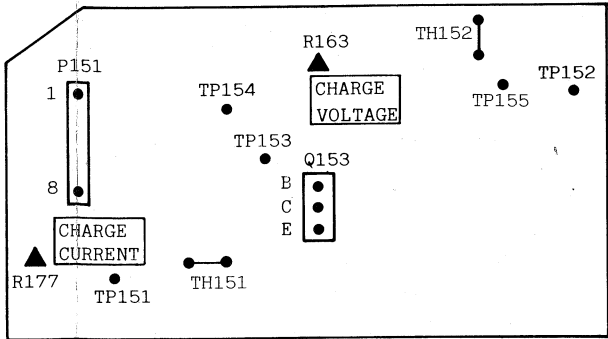


HIGH SPEED CHARGE C.B.A. VEPS0123A



High Speed Charge C.B.A.

LOCATION OF TEST POINTS & ADJUSTMENT POINTS



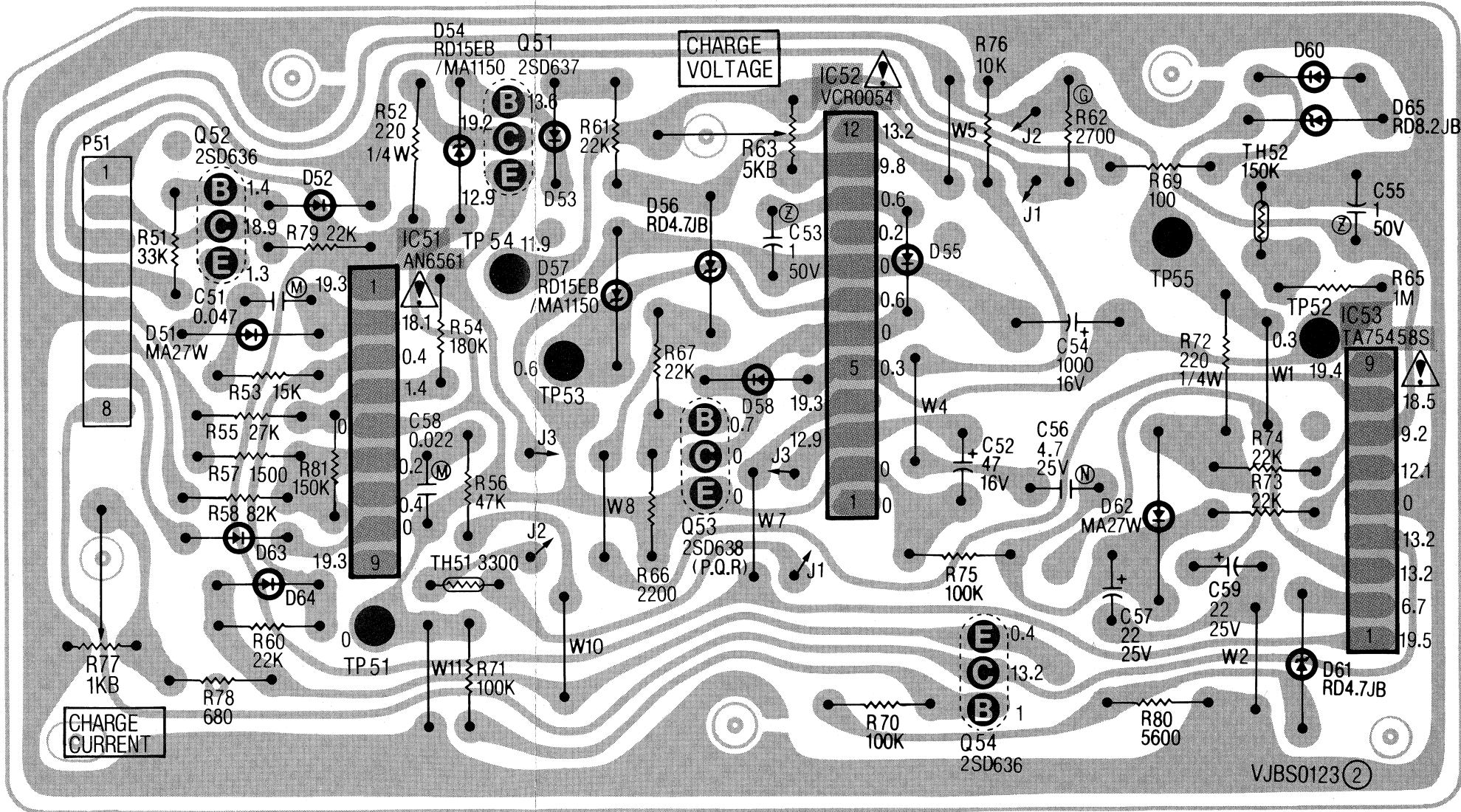
High Speed Charge Board.

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

P51

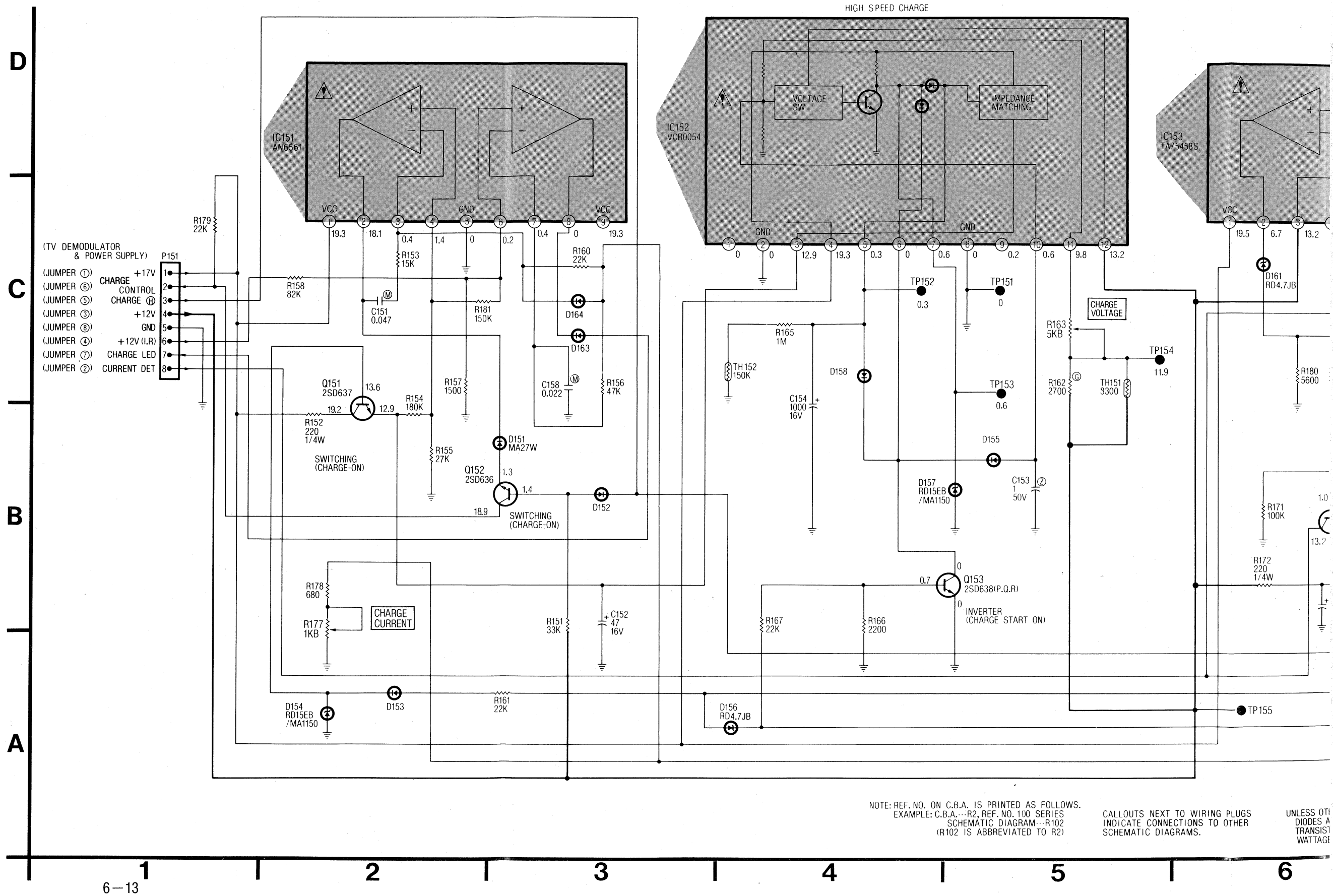
1	+17V
2	CHARGE CONTROL
3	CHARGE (H)
4	+12V
5	GND
6	+12V(I.R)
7	CHARGE LED
8	CURRENT DET



REF. NO. 100 SERIES

UNLESS OTHERWISE SPECIFIED,
DIODES ARE MA165/ISS119,
TRANSISTOR RANKS ARE Q,R OR S AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

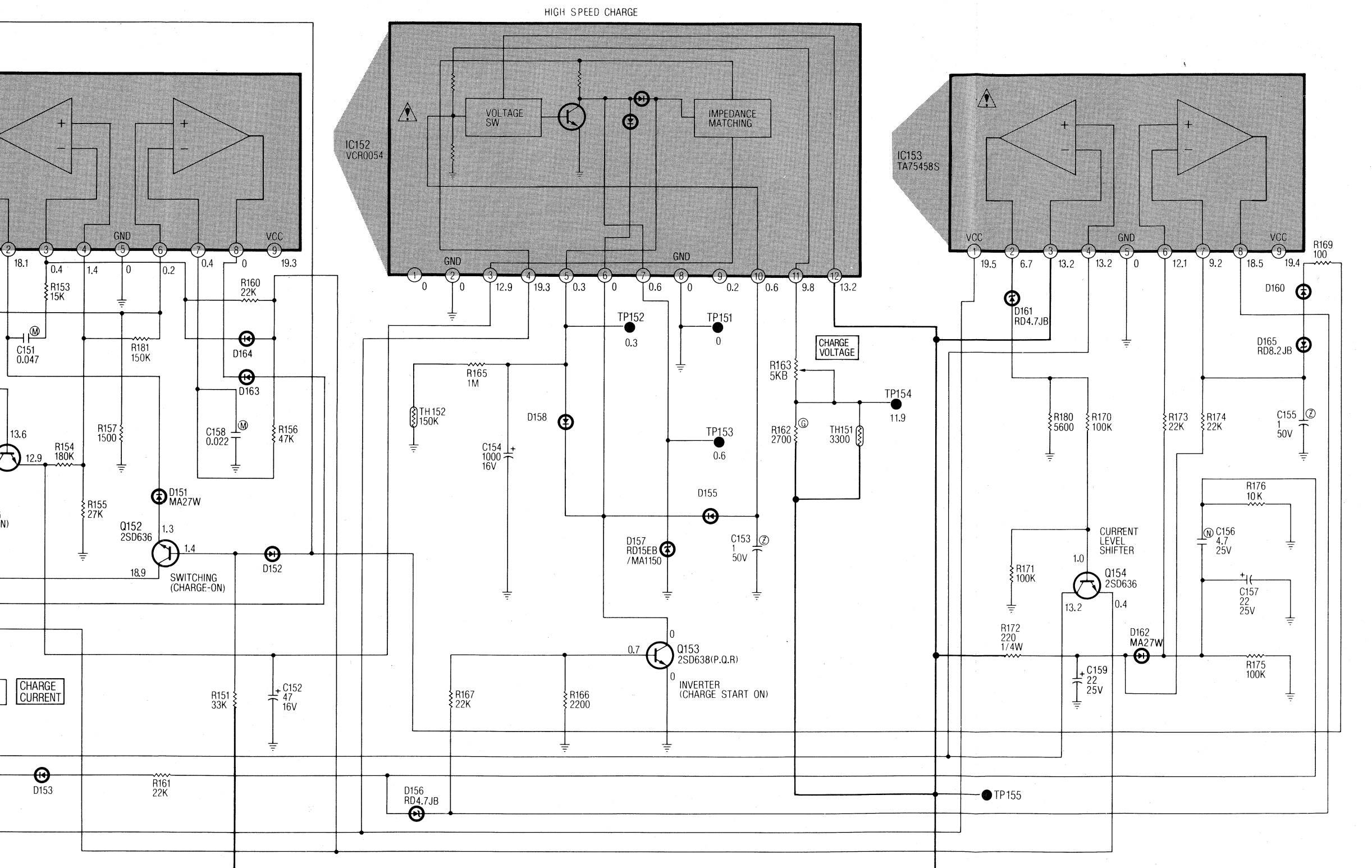
IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.



HEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.



NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 100 SERIES
SCHEMATIC DIAGRAM---R102
(R102 IS ABBREVIATED TO R2)

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119,
TRANSISTOR RANKS ARE Q,R OR S AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

VJBS0123

TV DEMODULATOR & POWER SUPPLY C.B.A. VEPS0735A1

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

E
D
C
B
A

P701	1 AUDIO
	2 GND
	3 VIDEO
	4 GND
	5 GND

P702	1 TV/VCR
	2 GND
	3 CATV

P703	1 +6V
	2 TV/VCR

JUMPER	A BV
	B BT
	C BU
	D BS
	E AFT DEFEAT
	F DEFEAT
	G GND
	H +6V
	I +45V
	J +12V
	K +12V(IIR)
	L CATV
	M TV/VCR

TO POWER TR C.B.A.
① -P108 ①
② -P108 ②
③ -P108 ③

P101	1 AC 16V
	2 AC 16V

P102	1 AC 36V
	2 AC 36V
	3 AC 8V
	4 AC 8V
	5 AC 2.7V
	6 AC 2.7V

P103	1 AC 2.7V
	2 AC 2.7V
	3 GND
	4 +12V
	5 -45V

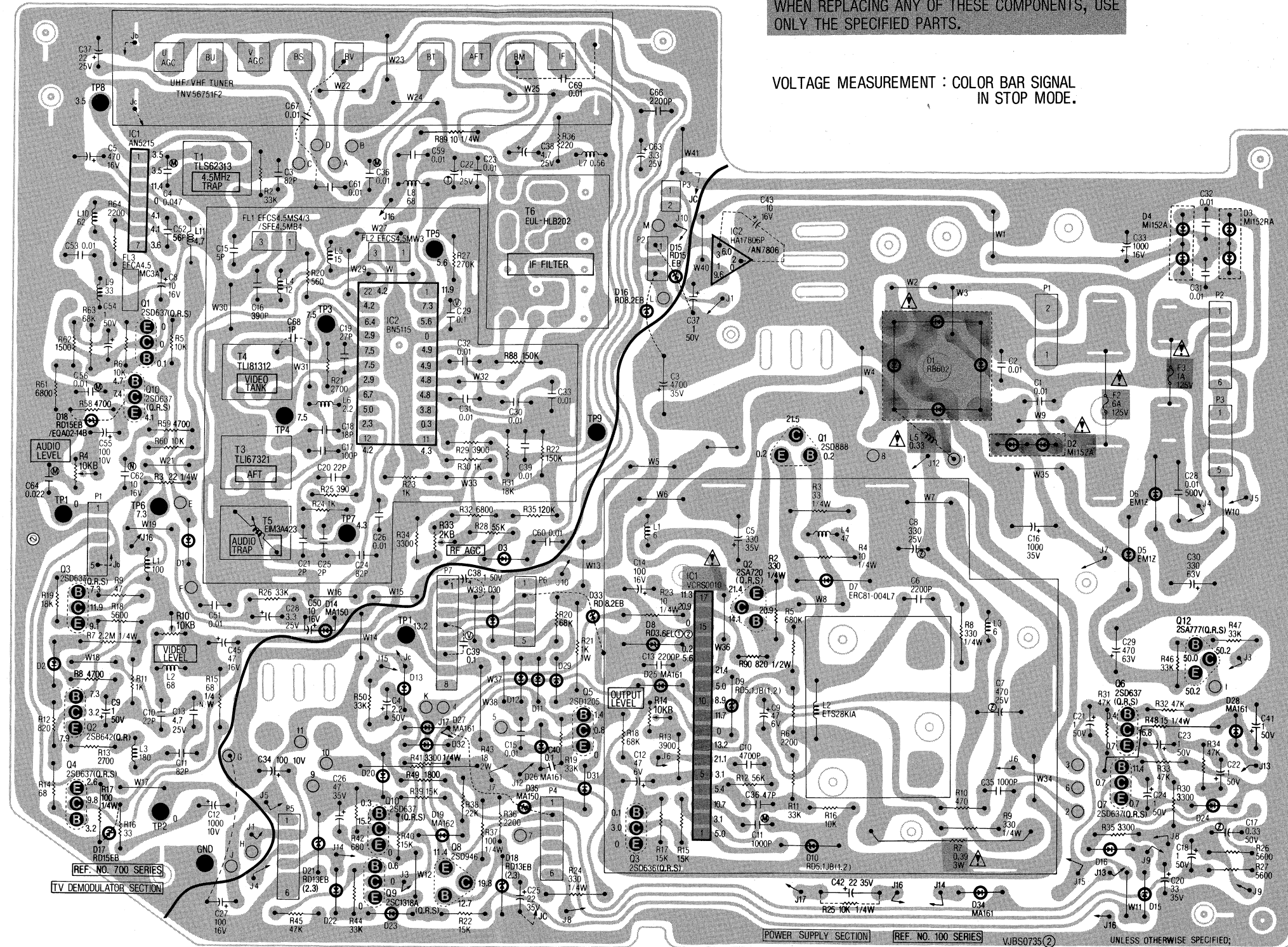
P104	1 POWER LED
	2 TIMER SET ON
	3 CHARGE LED
	4 POWER SW
	5 TIMER SET
	6 TIMER SET OFF

P105	1 +12V
	2 +6V
	3
	4 TIMER REC ④
	5 GND
	6 GND

P106	1
	2 SERIAL DATA
	3 CH LOCK/ANT
	4 EXT CLOCK
	5 SAFETY TAB/CHARGE

P107	1 GND
	2 SAFETY TAB/CHARGE
	3 SERIAL DATA
	4 CH LOCK/ANT
	5 EXT CLOCK
	6 GND
	7 +12V
	8

JUMPER	1 +17V
	2 CURRENT DET
	3 +12V
	4 +12V(IIR)
	5 CHARGE ④
	6 CHARGE CONTROL
	7 CHARGE LED
	8 GND



POWER

Q1
Q2
Q3
Q5
Q6
Q7
Q8
Q9
Q10
Q12

TV DEMO

Q1
Q2
Q3
Q4
Q10

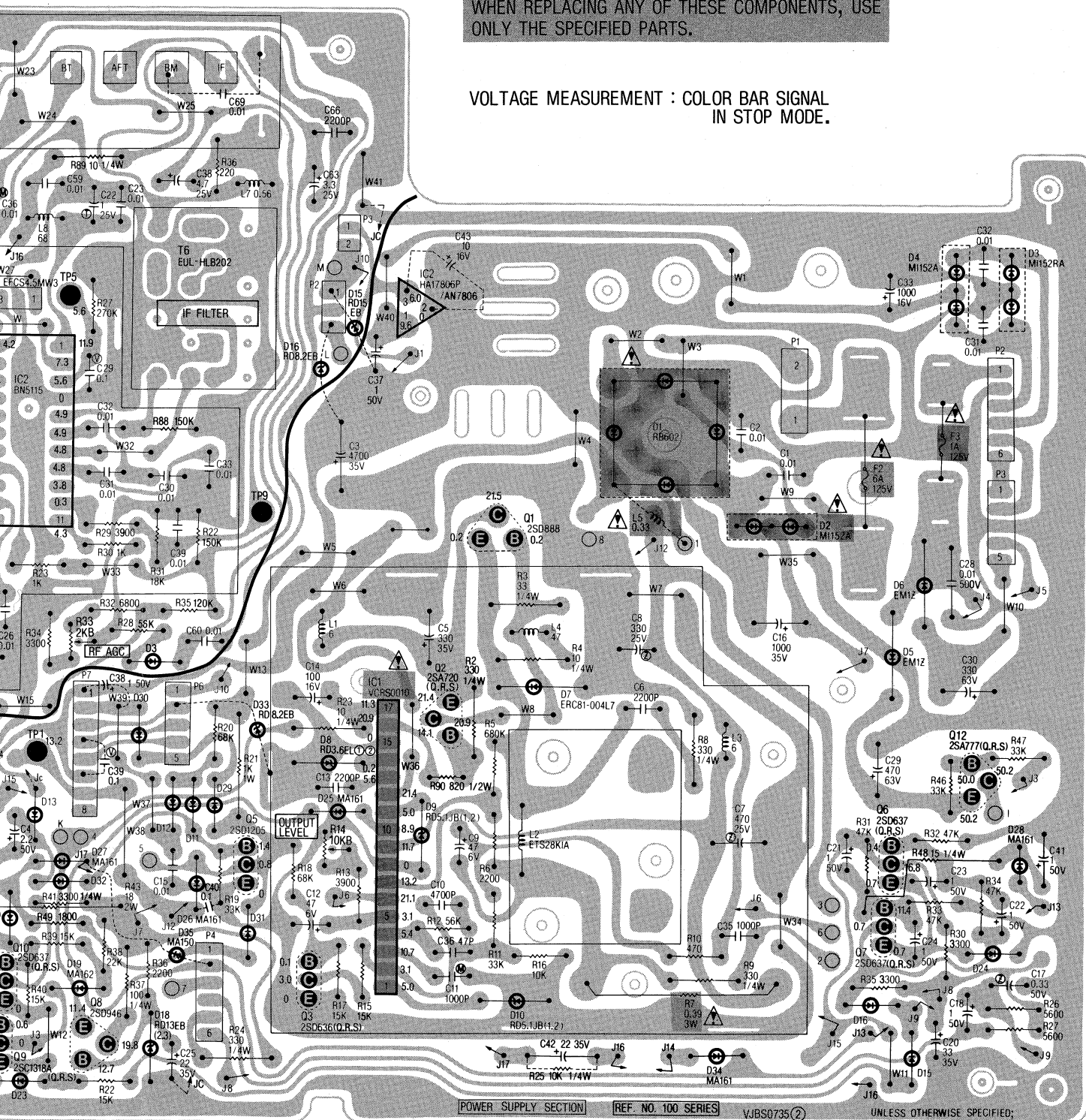
LOC

1 2 3 4 5 6 7

PLY C.B.A. VEPS0735A1

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.



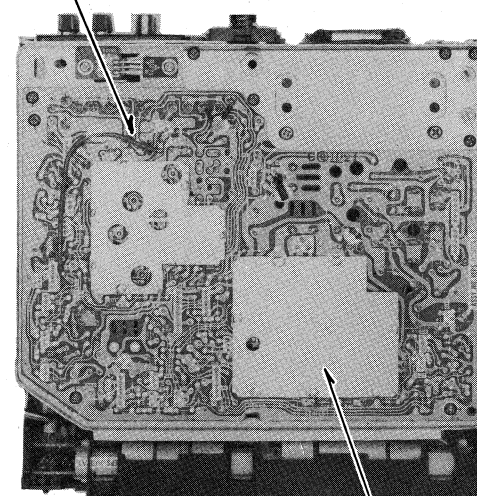
P104	1 POWER LED	P105	1 +12V	P106	1 SERIAL DATA	P107	1 GND	JUMPER	1 +17V
	2 TIMER SET ON		2 +6V		2 SERIAL DATA		2 SAFETY TAB/CHARGE		2 CURRENT DET
	3 CHARGE LED		3		3 CH LOCK/ANT		3 EXT CLOCK		3 +12V
	4 POWER SW		4 TIMER REC @		4 EXT CLOCK		4 SAFETY TAB/CHARGE		4 +12V(IR)
	5 TIMER SET		5 GND		5		5		5 CHARGE @
	6 TIMER SET OFF		6 GND		6		6		6 CHARGE CONTROL
					7 +12V		7		7 CHARGE LED
					8 GND		8		8 GND

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W

POWER SUPPLY SECTION	
Q1	C-5
Q2	C-5
Q3	B-4
Q5	B-4
Q6	B-6
Q7	B-6
Q8	B-3
Q9	B-3
Q10	B-3
Q12	C-7

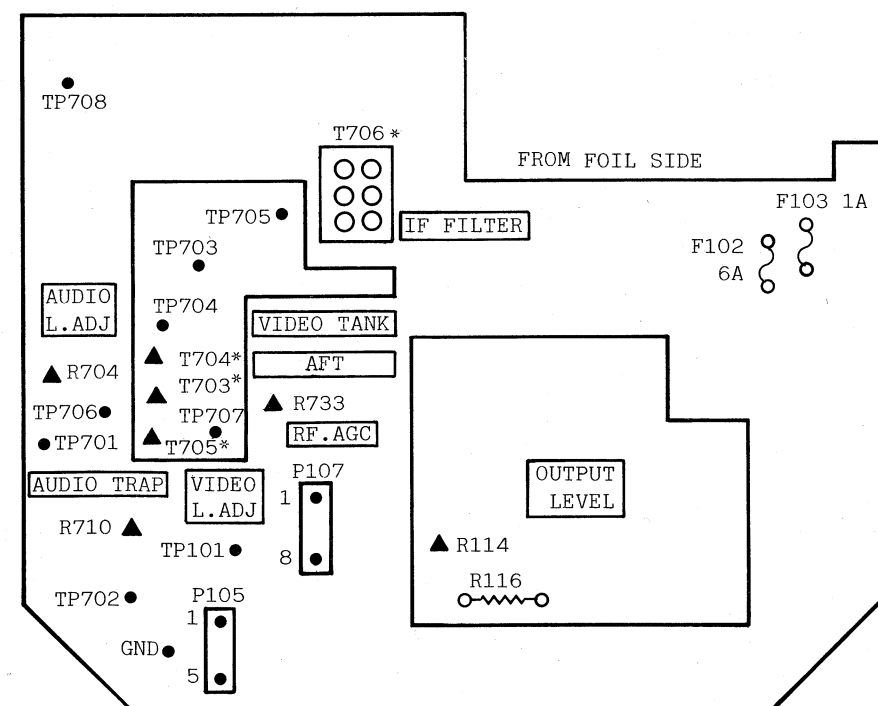
TV DEMODULATOR SECTION	
Q1	D-2
Q2	B-2
Q3	C-2
Q4	B-2
Q10	D-2

TV Demodulator Section



Power Supply Section

LOCATION OF TEST POINTS & ADJUSTMENT POINTS

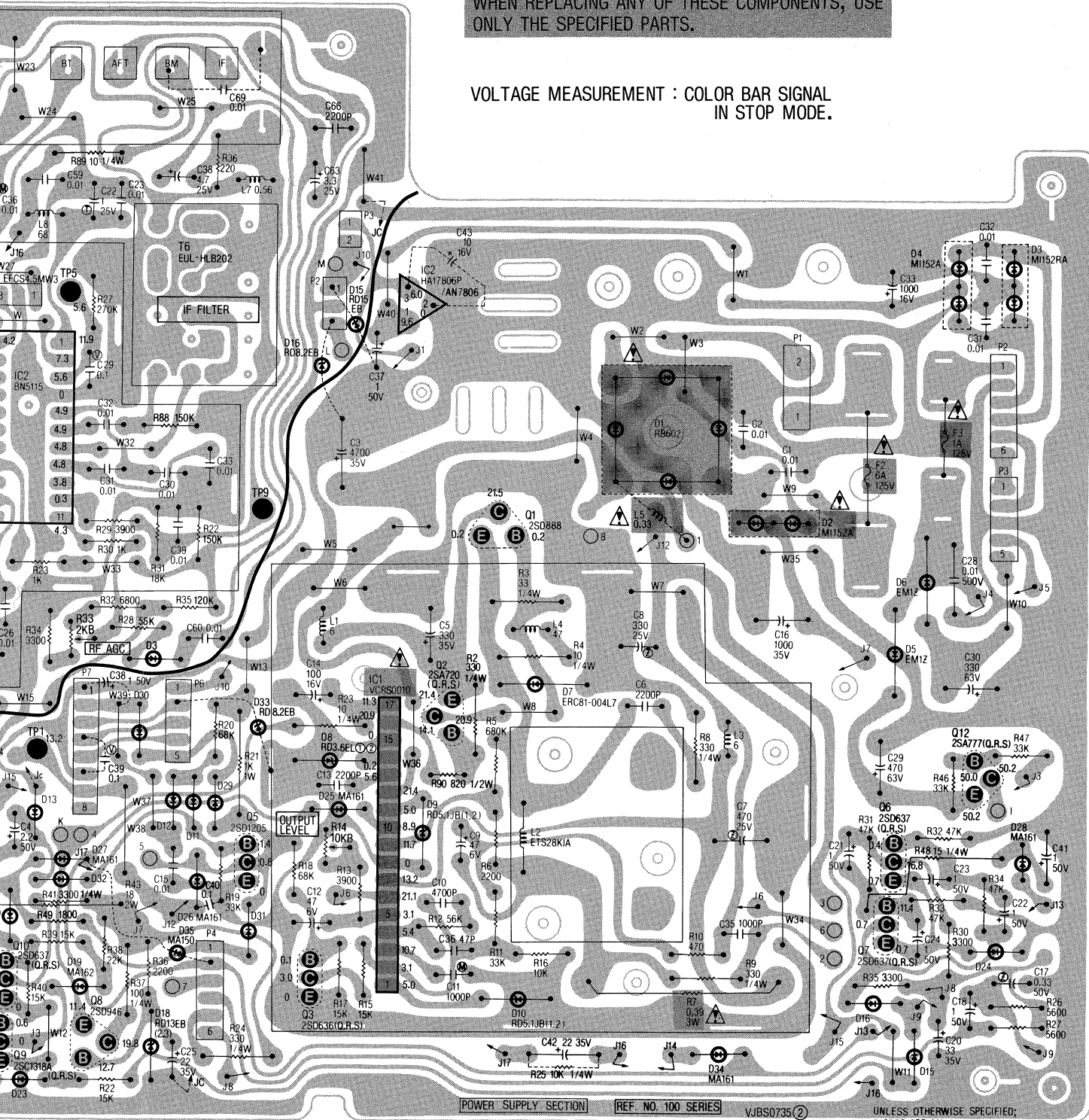


TV Demodulator & Power Supply Board
* These controls have to be adjusted from the component side.

PLY C.B.A. VEPS0735A1

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

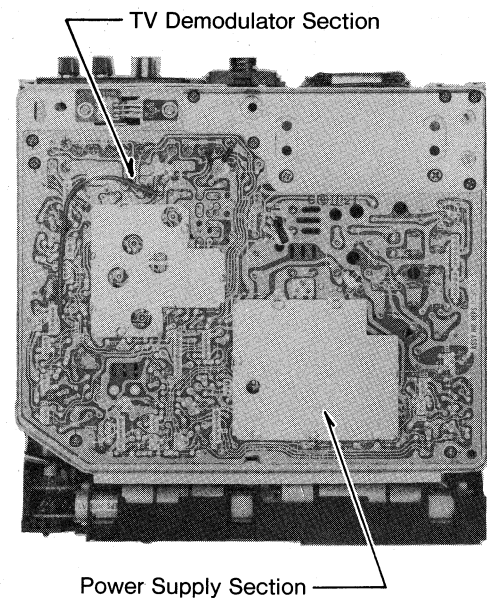


P104	P105	P106	P107	JUMPER
1 POWER LED	1 +12V	1 SERIAL DATA	1 GND	1 +17V
2 TIMER SET ON	2 +6V	2 SAFETY TAB/CHARGE	2 SAFETY TAB/CHARGE	2 CURRENT DET
3 CHARGE LED	3	3 CH LOCK/ANT	3 SERIAL DATA	3 +12V
4 POWER SW	4	4 EXT CLOCK	4 CH LOCK/ANT	4 +12V(I/R)
5 TIMER SET	5	5 SAFETY TAB/CHARGE	5 EXT CLOCK	5 CHARGE Ⓢ
6 TIMER SET OFF	6 GND		6 GND	6 CHARGE CONTROL
			7 +12V	7 CHARGE LED
			8 GND	8 GND

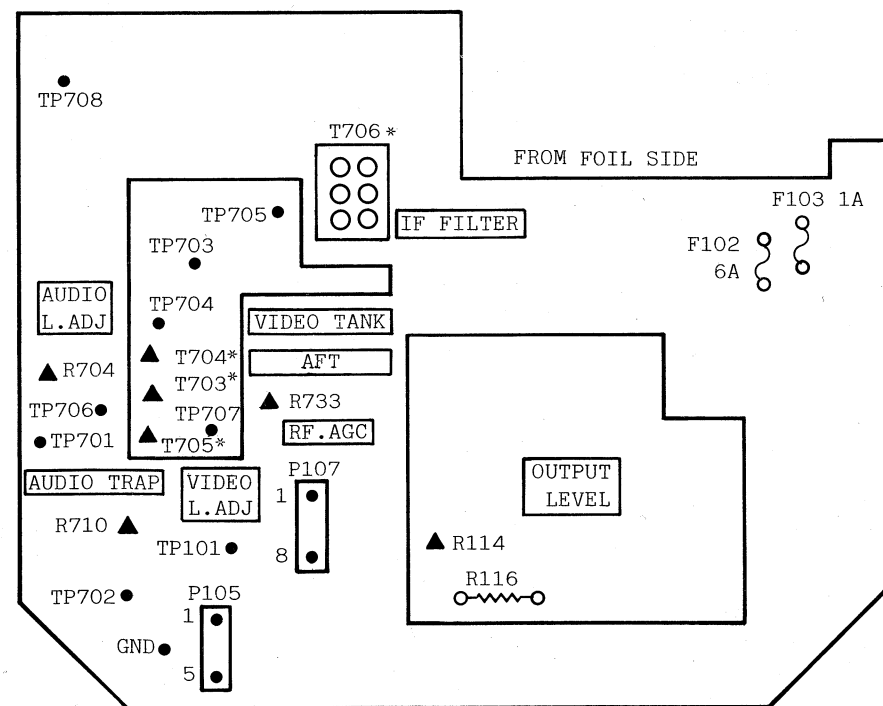
UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W

POWER SUPPLY SECTION	
Q1	C-5
Q2	C-5
Q3	B-4
Q5	B-4
Q6	B-6
Q7	B-6
Q8	B-3
Q9	B-3
Q10	B-3
Q12	C-7

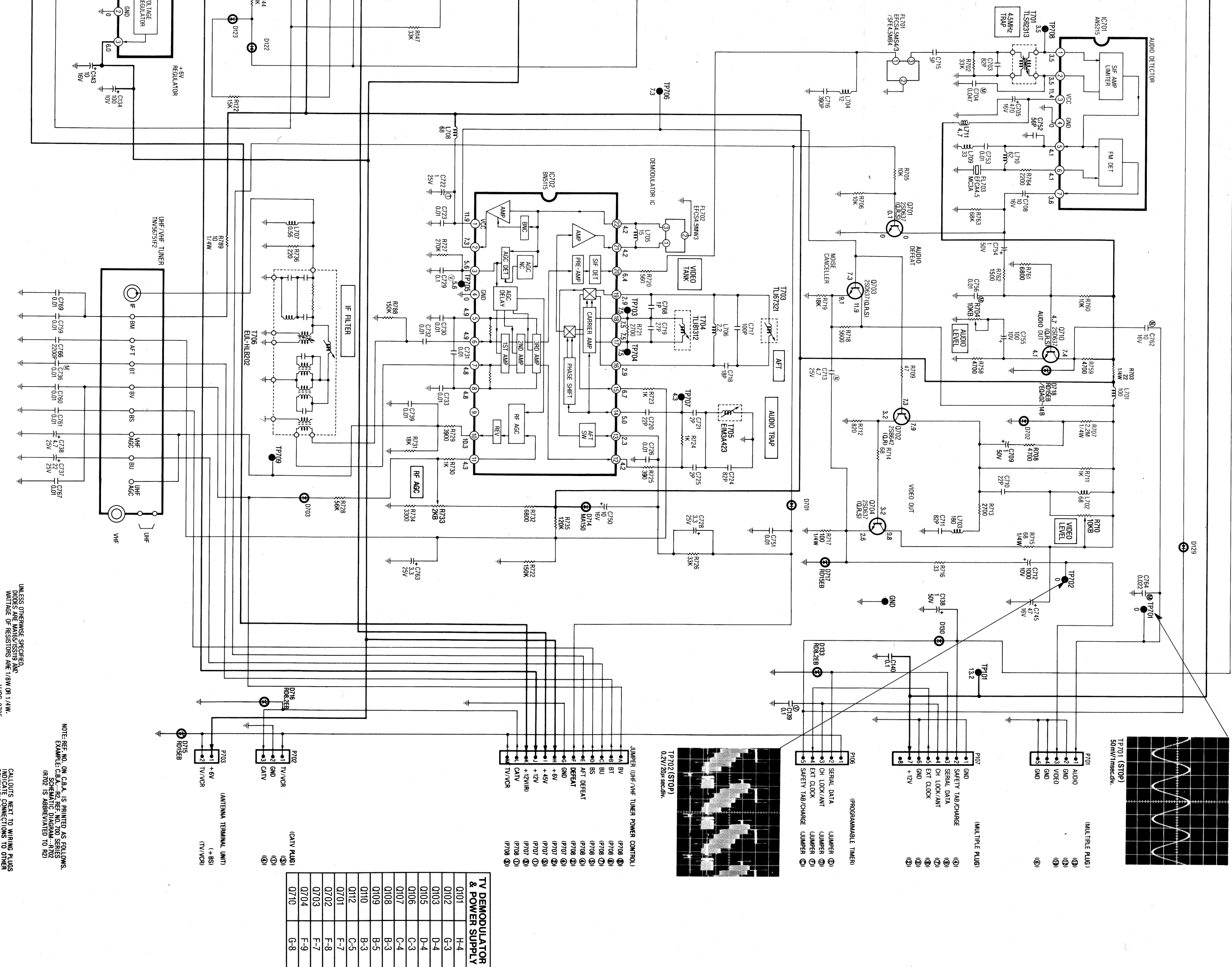
TV DEMODULATOR SECTION	
Q1	D-2
Q2	B-2
Q3	C-2
Q4	B-2
Q10	D-2



LOCATION OF TEST POINTS & ADJUSTMENT POINTS

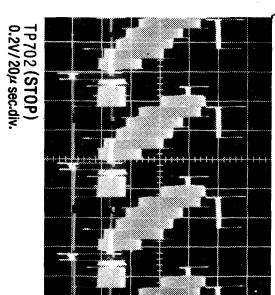


TV Demodulator & Power Supply Board
* These controls have to be adjusted from the component side.



VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

The timing diagram shows four waveforms over a period of 0.2V/20μsec/div. The top waveform, P701 (STOP), is a square wave. The second waveform, P107, is a square wave with a label (MULTIPLE PLUG) and a list of signals: (1) GND, (2) SAFETY TAB/CHARGE, (3) SERIAL DATA, (4) CH LOCK/ANT, (5) EXT CLOCK, (6) GND, and (7) +12V. The third waveform, P106, is a square wave with a label (PROGRAMMABLE TIMER) and a list of signals: (1) JUMPER (C), (2) SERIAL DATA, (3) CH LOCK/ANT, (4) JUMPER (D), (5) EXT CLOCK, (6) JUMPER (E), and (7) SAFETY TAB/CHARGE. The bottom waveform, P702 (STOP), is a square wave with a label (MULTIPLE PLUG) and a list of signals: (1) JUMPER (C), (2) SERIAL DATA, (3) CH LOCK/ANT, (4) JUMPER (D), (5) EXT CLOCK, (6) JUMPER (E), and (7) SAFETY TAB/CHARGE.



TV DEMODULATOR & POWER SUPPLY	
0101	H-4
0102	G-3
0103	D-4
0105	D-4
0106	C-3
0107	G-4
0108	B-3
0109	B-5
0110	B-3
0112	C-5
0701	F-7
0702	F-8
0703	F-7
0704	F-9
0710	G-8

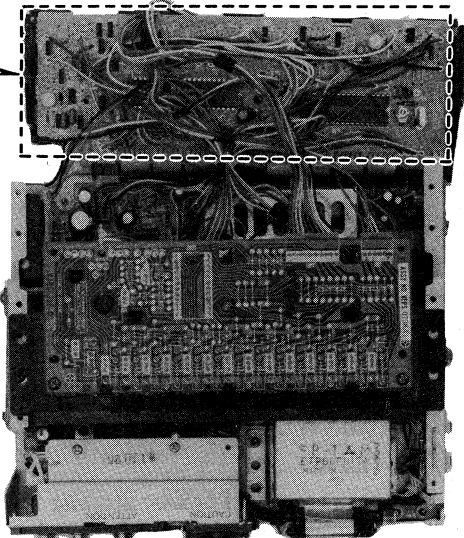
UNLESS OTHERWISE SPECIFIED,
DIODES ARE M16G/ISS19 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.
VABS 0735

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS:
EXAMPLE: C.B.A. REF. NO. 700 SERIES
SCHEMATIC DIAGRAM NO. 1
(R702 IS ABBREVIATED TO R2)

CALCULITS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

6-16
PROGRAMMABLE TIMER
C.B.A.

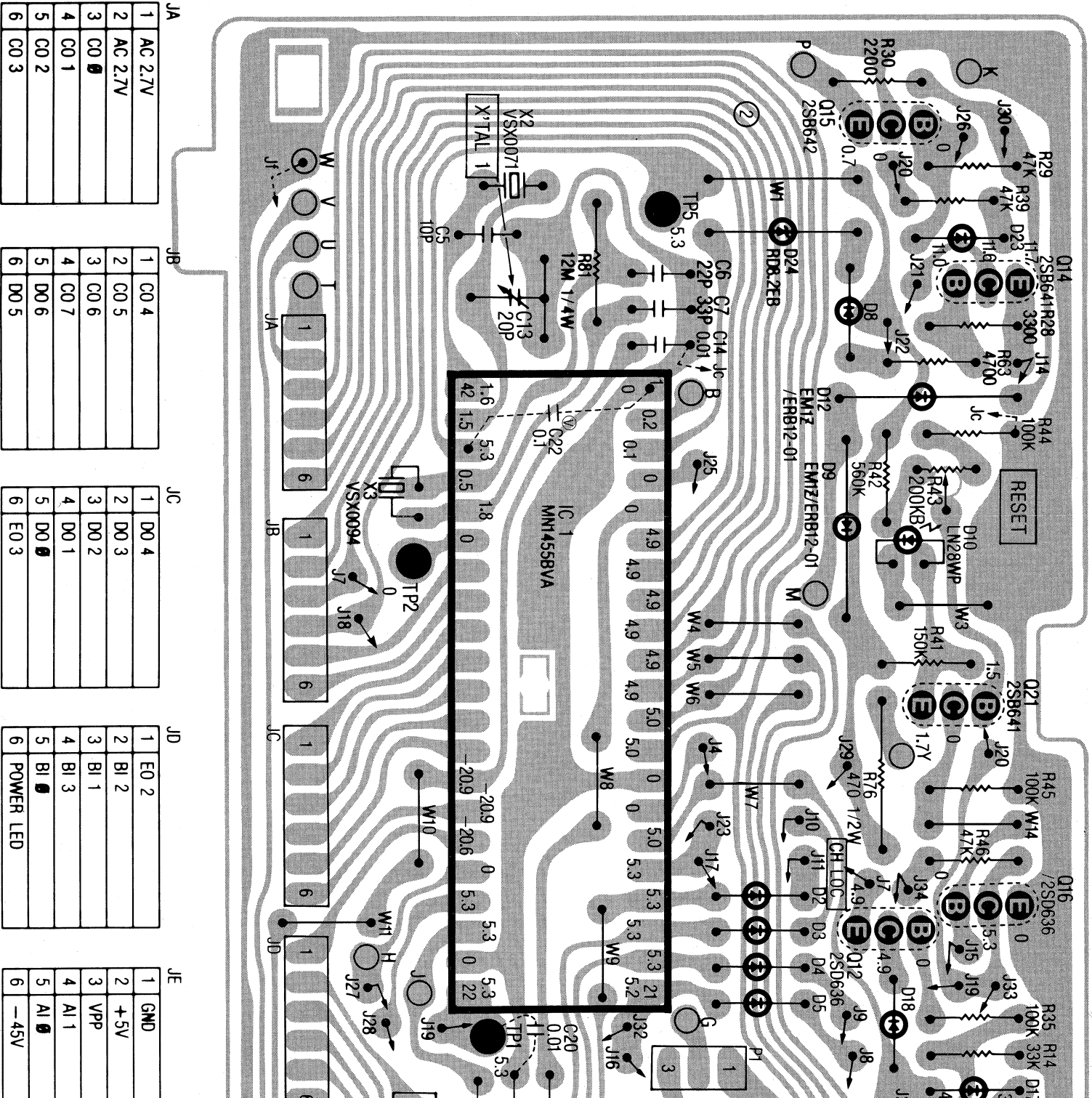
PROGRAMMABLE TIMER C.B.A. VEPS0736A1



VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

P7601	1	IR REMOTE
	2	+12V(I/R)
	3	GND
JUMPER		
Y	BACKUP ⊕	
Z	GND	

JUMPER		
A	TV/VCR	
B	AFT DEFECT	
C	SAFETY TAB/CHARGE	
D	CH LOCK/ANT	
E	SERIAL DATA	
F	EXT CLOCK	
G	+12V(I/R)	
H	CH RESET	
I	CH UP	
J	SINS ⊕	
K	GND	
L	+12V	
M	+6V	
N		
P	TIMER REC ⊕	
Q	GND	
S	+12V	
T	AC2.7V	
U	AC2.7V	
V	-45V	
W	GND	
a	TIMER SET OFF	
b	TIMER SET	
d	TIMER SET ON	
e	POWER SW	
f	POWER LED	
g	CHARGE LED	

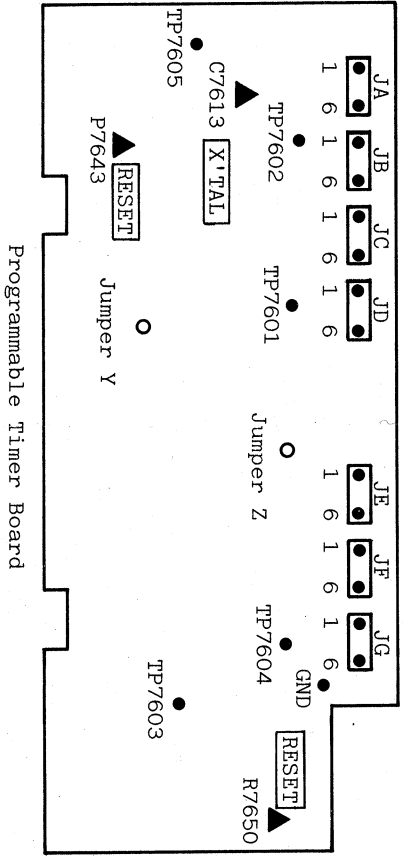


1

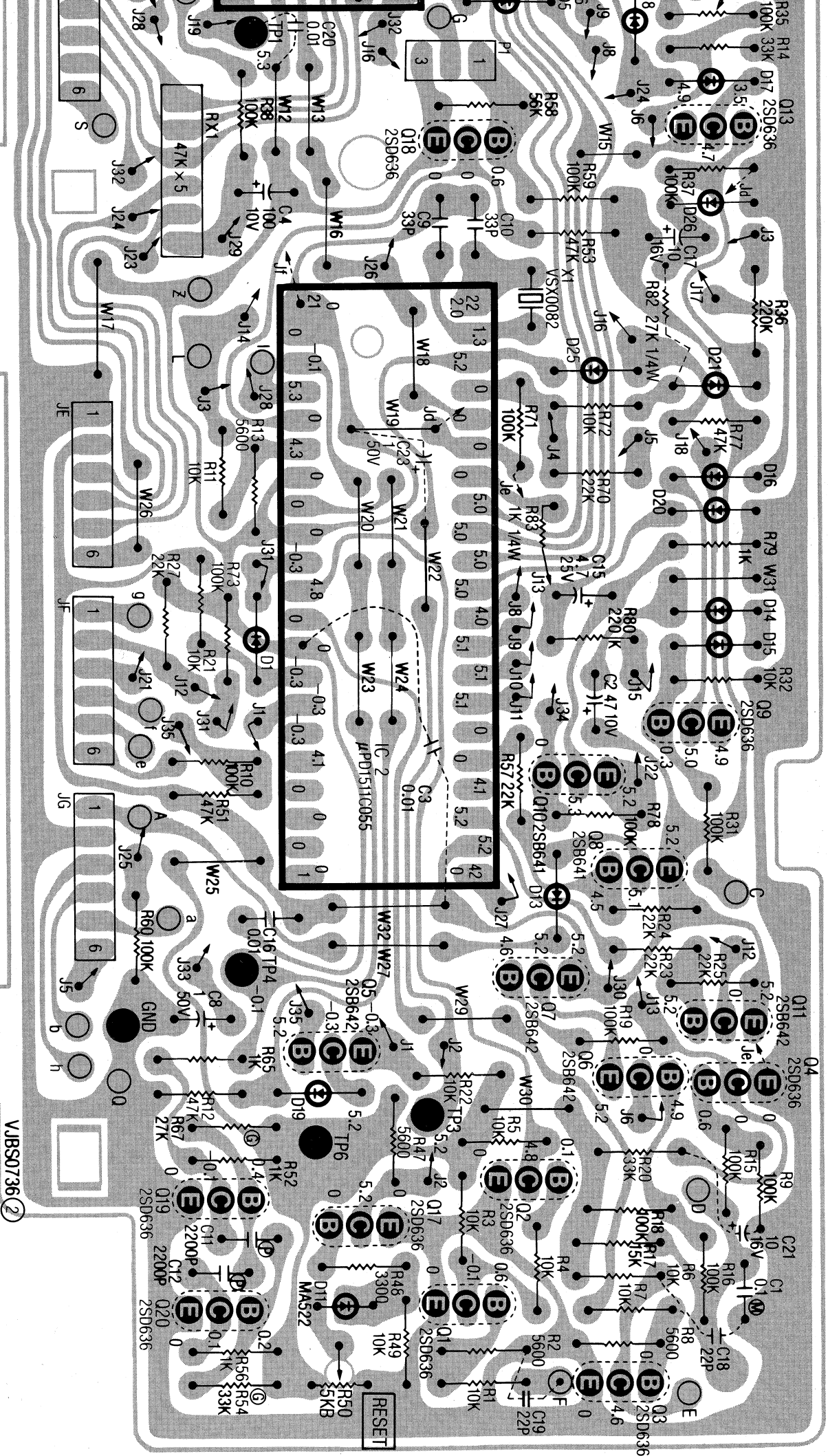
2

3

LOCATION OF TEST POINTS & ADJUSTMENT POINTS



PROGRAMMABLE TIMER C.B.A.	
01	B-7
02	B-7
03	C-7
04	C-6
05	B-6
06	C-6
07	B-6
08	C-6
09	C-6
10	C-6
11	C-6
12	C-4
13	C-4
14	C-2
15	C-2
16	C-4
17	B-7
18	B-4
19	B-7
20	B-7
21	C-3



REF. NO. 7600 SERIES

UNLESS OTHERWISE SPECIFIED:
DIODES ARE MAT6S/ISS19,
TRANSISTOR RANKS ARE Q OR R AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

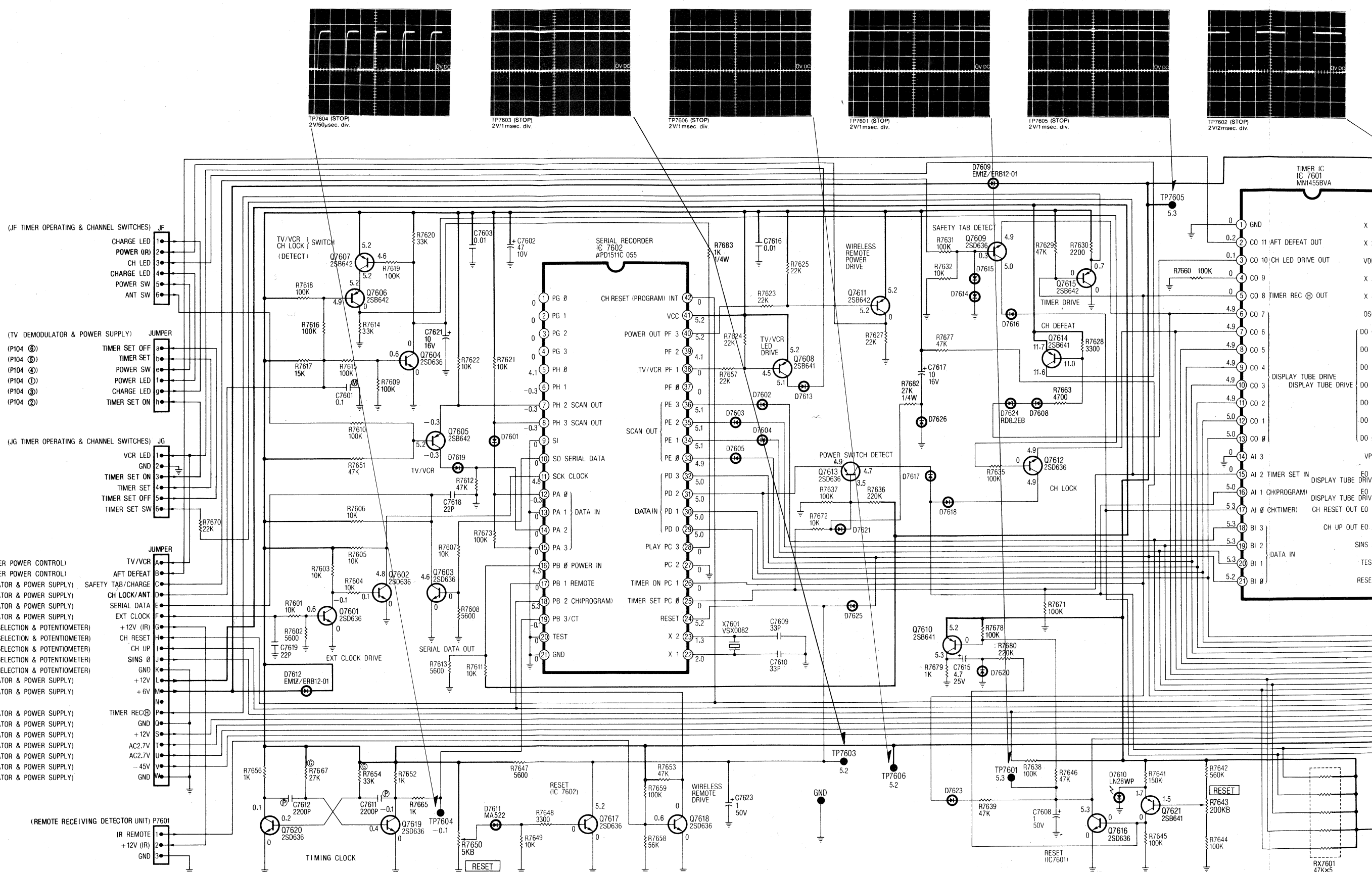
GND	1	CHARGE LED
+5V	2	POWER(L,R)
VPP	3	CH LED
A1	4	CHARGE LED
A1	5	POWER SW
-45V	6	ANT SW

JF	1	CHARGE LED
	2	POWER(L,R)
	3	CH LED
	4	CHARGE LED
	5	POWER SW
	6	ANT SW

JG	1	VCR LED
	2	GND
	3	TIMER SET ON
	4	TIMER SET
	5	TIMER SET OFF
	6	TIMER SET SW

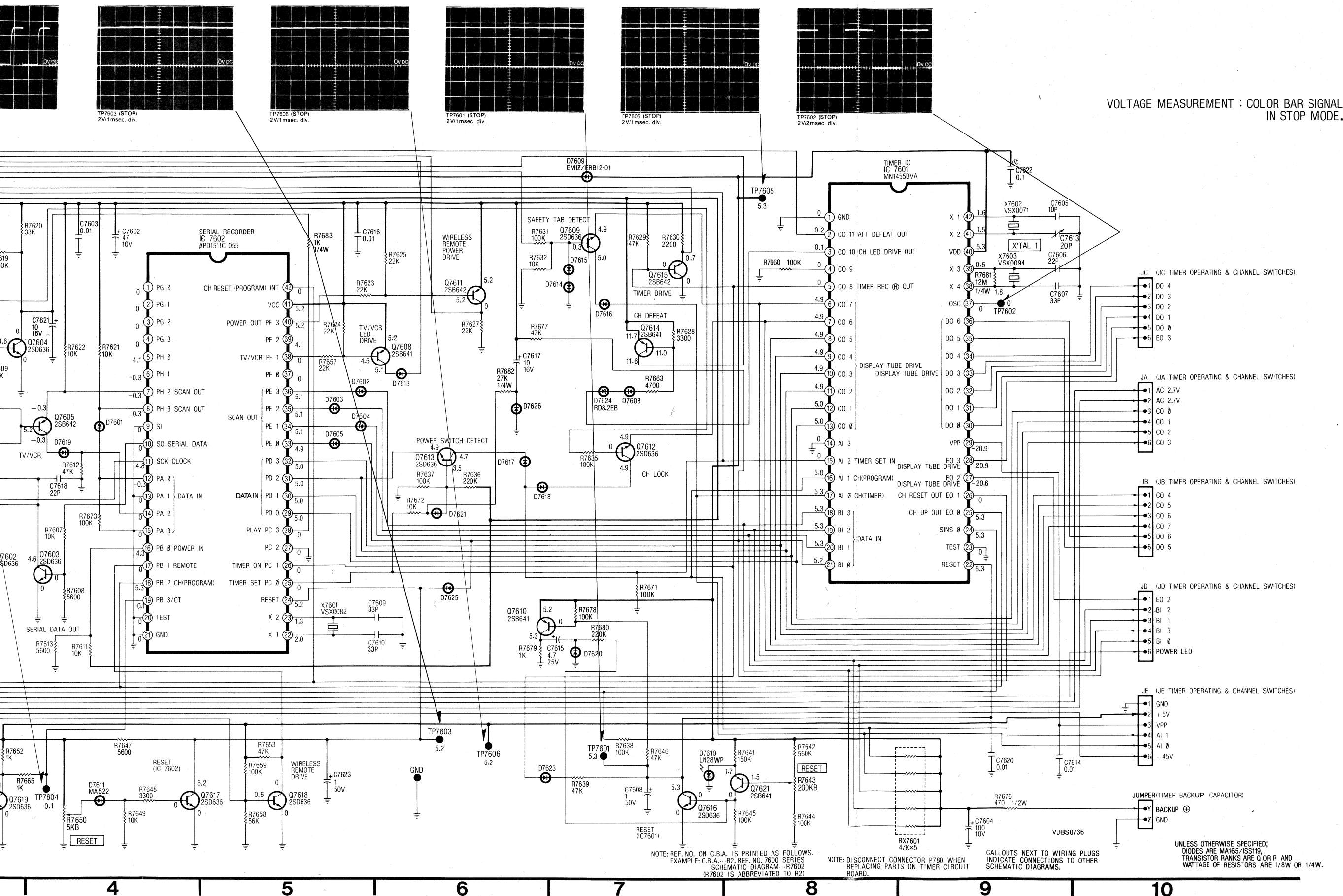
PROGRAMMABLE TIMER SCHEMATIC DIAGRAM

E
D
C
B
A

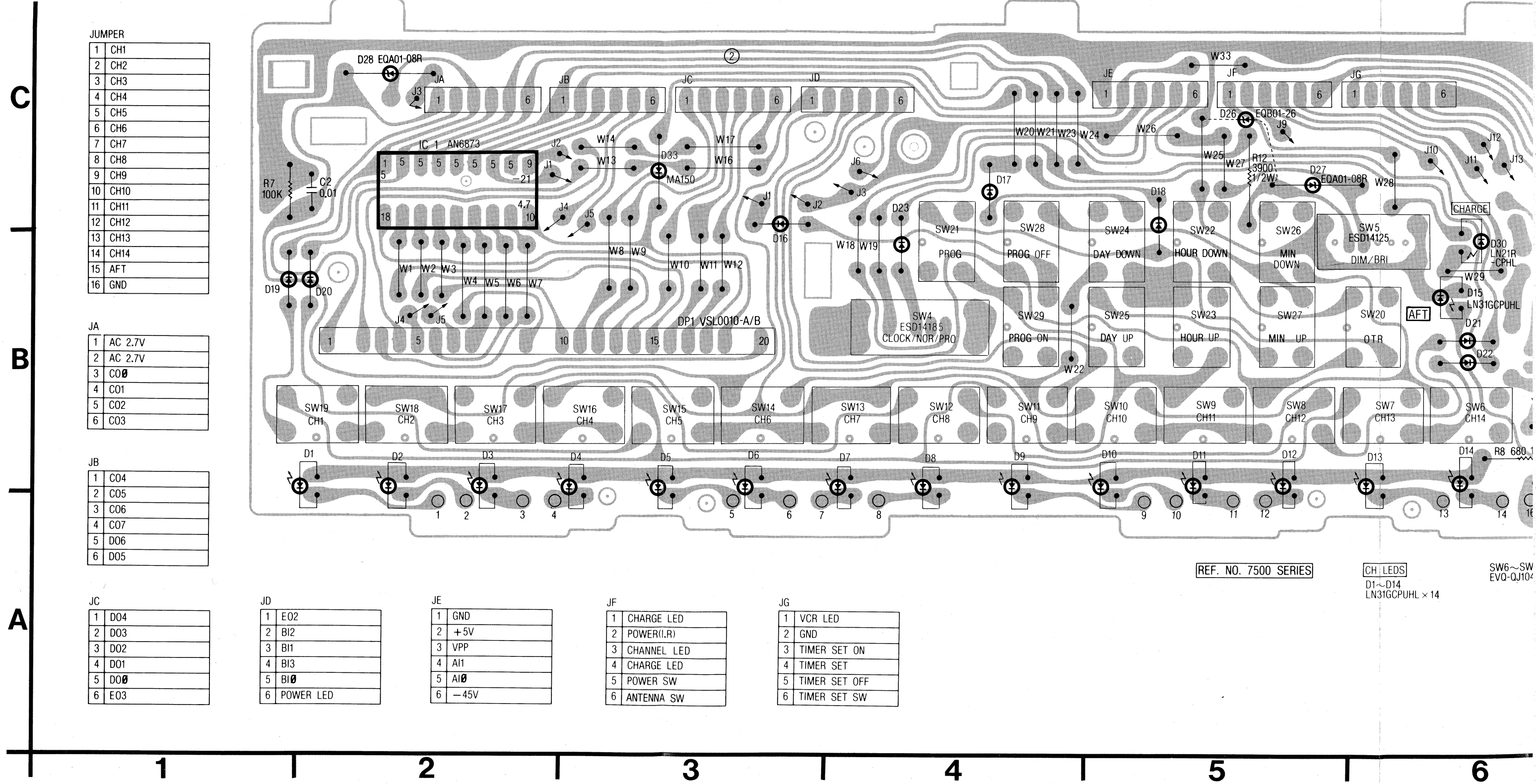


NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A. R2, REF. NO. 7600 SERIES
SCHEMATIC DIAGRAM--R7602
(R7602 IS ABBREVIATED TO R2)

NOTE: DISCONNECT CONNECTOR P780 WHEN
REPLACING PARTS ON TIMER CIRCUIT
BOARD.



TIMER OPERATING & CHANNEL SWITCHES C.B.A. VEPS0737A1



TIMER OPERATING & CHANNEL SWITCHES C.B.A. VEPS0737A1

C

B

A

JUMPER

1	CH1
2	CH2
3	CH3
4	CH4
5	CH5
6	CH6
7	CH7
8	CH8
9	CH9
10	CH10
11	CH11
12	CH12
13	CH13
14	CH14
15	AFT
16	GND

JA

1	AC 2.7V
2	AC 2.7V
3	C00
4	C01
5	C02
6	C03

JB

1	C04
2	C05
3	C06
4	C07
5	D06
6	D05

JC

1	D04
2	D03
3	D02
4	D01
5	D00
6	E03

JD

1	E02
2	BI2
3	BI1
4	BI3
5	BI0
6	POWER LED

JE

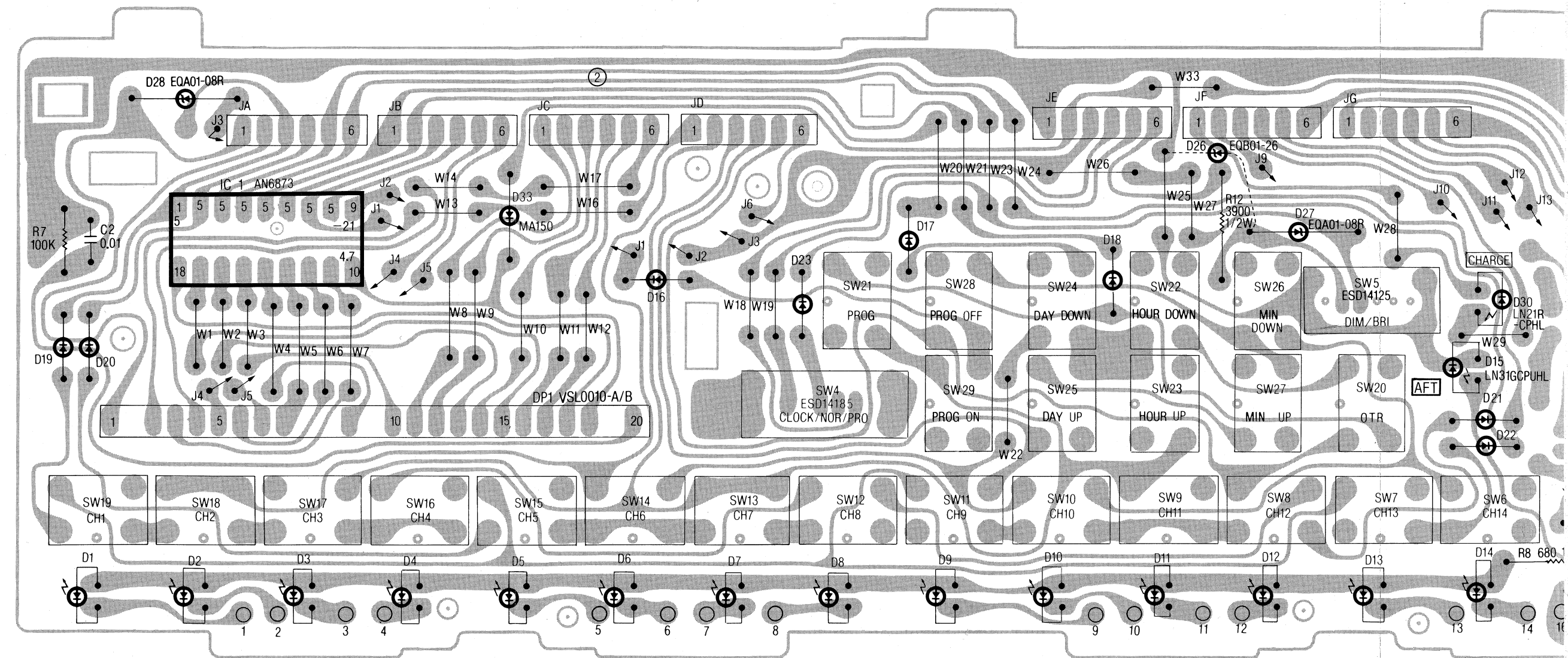
1	GND
2	+5V
3	VPP
4	AI1
5	AI0
6	-45V

JF

1	CHARGE LED
2	POWER(LR)
3	CHANNEL LED
4	CHARGE LED
5	POWER SW
6	ANTENNA SW

JG

1	VCR LED
2	GND
3	TIMER SET ON
4	TIMER SET
5	TIMER SET OFF
6	TIMER SET SW



REF. NO. 7500 SERIES

CH LEDS
D1~D14
LN31GCPUHL x 14

SW6~SW
EVQ-QJ104

1

2

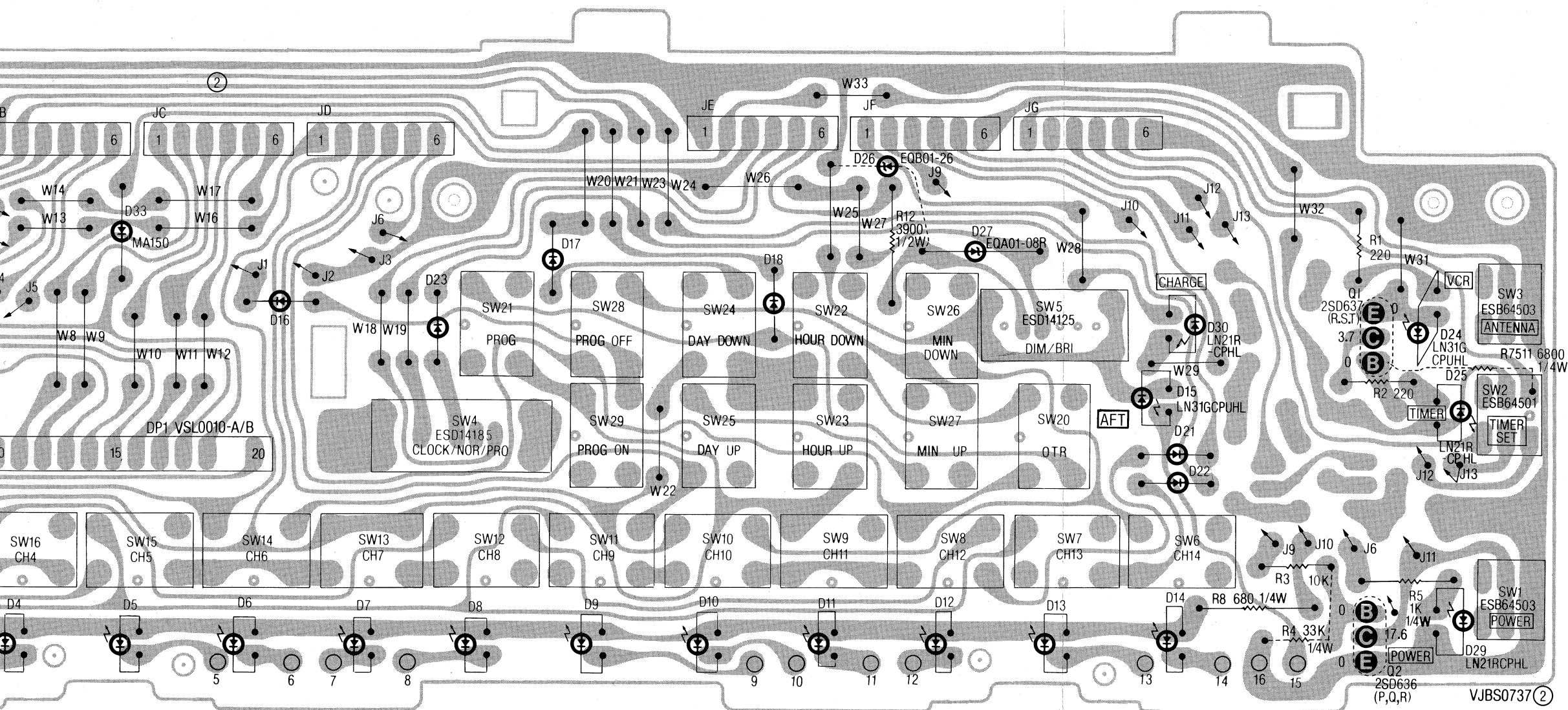
3

4

5

6

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.



REF. NO. 7500 SERIES

CH LEDS
D1~D14
LN31GCPUHL x 14

SW6~SW29
EVQ-QJ104K x 24

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

JF

1	CHARGE LED
2	POWER(I.R)
3	CHANNEL LED
4	CHARGE LED
5	POWER SW
6	ANTENNA SW

JG

1	VCR LED
2	GND
3	TIMER SET ON
4	TIMER SET
5	TIMER SET OFF
6	TIMER SET SW

3

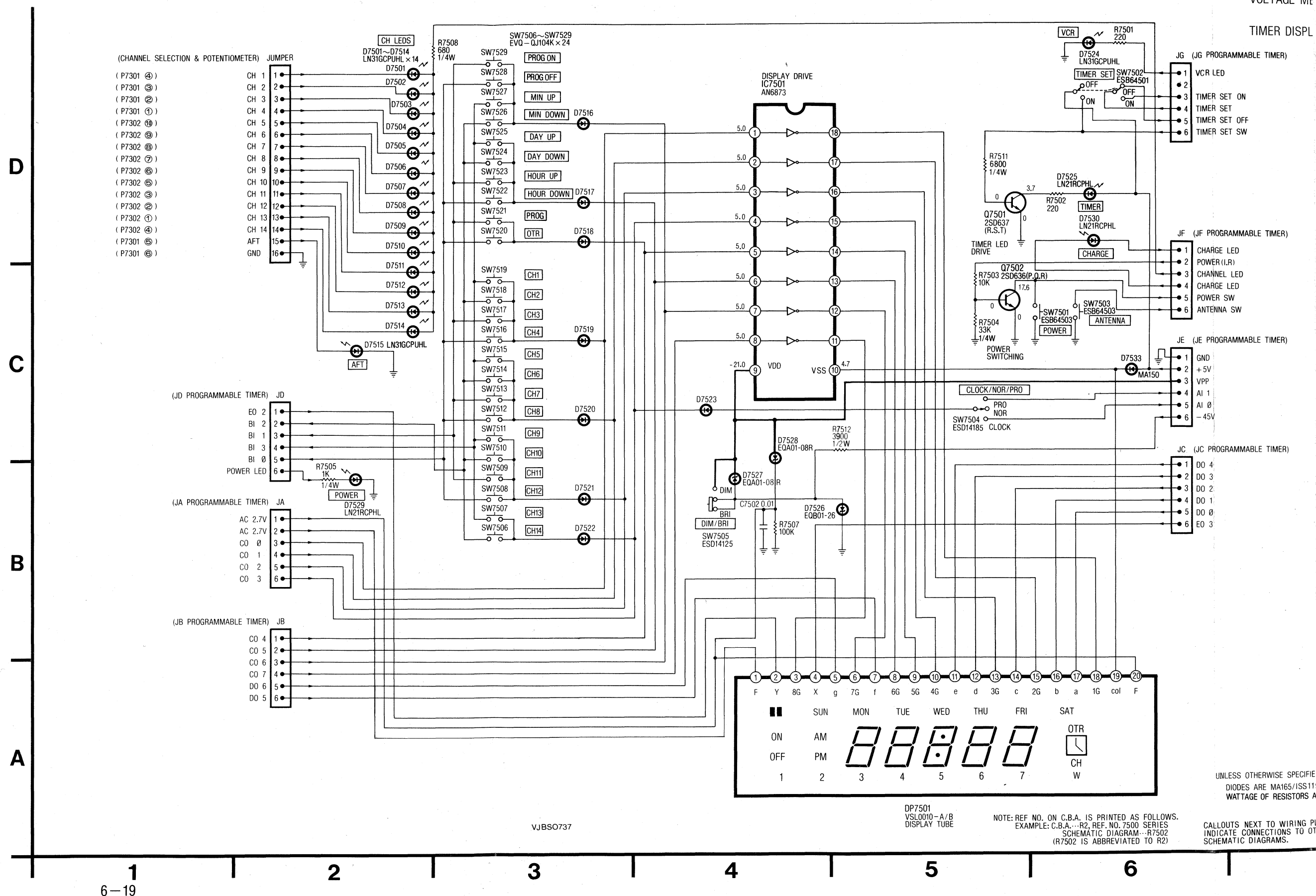
4

5

6

7

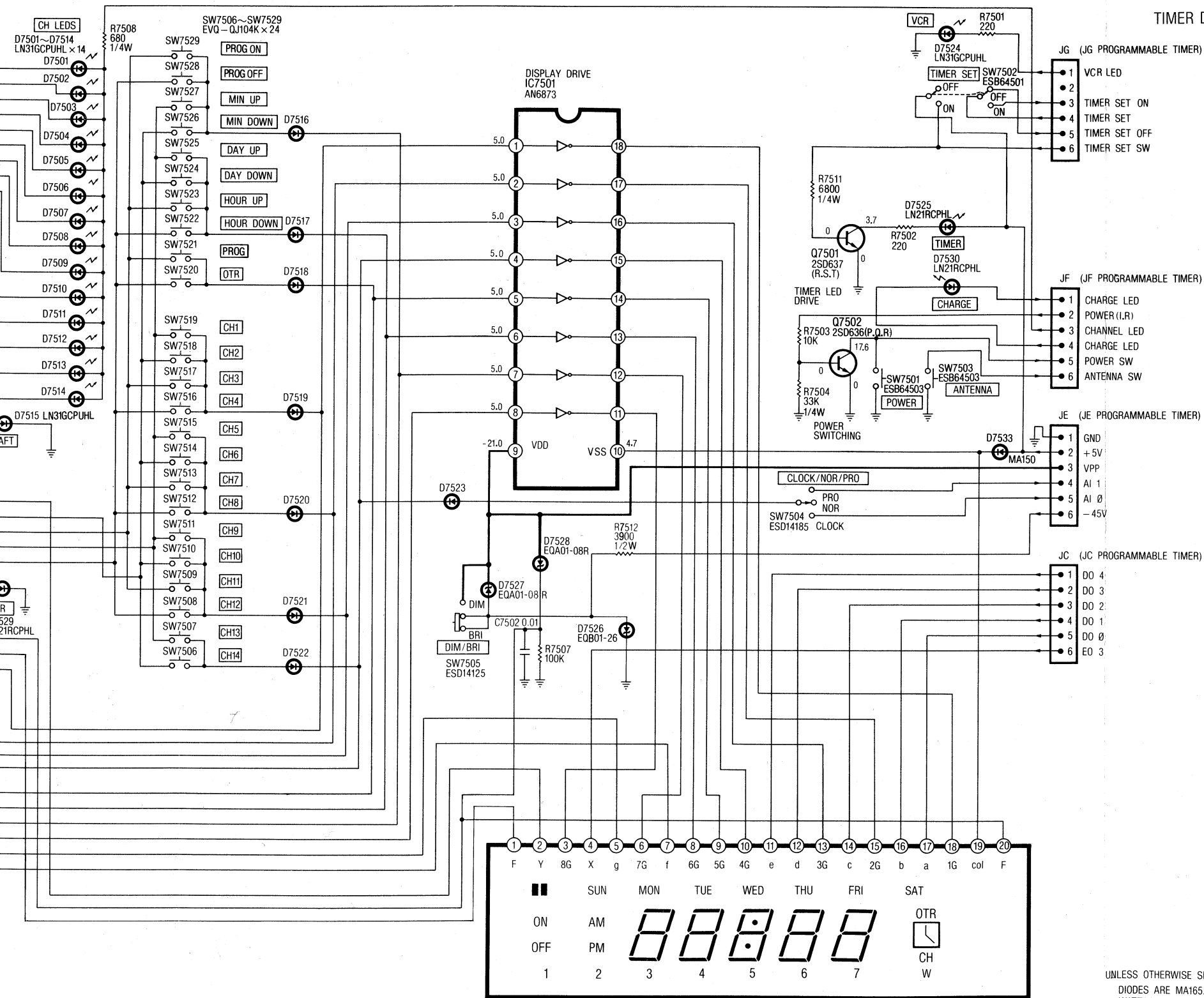
TIMER DISPL



UNLESS OTHERWISE SPECIFIED
DIODES ARE MA165/ISS11
WATTAGE OF RESISTORS A

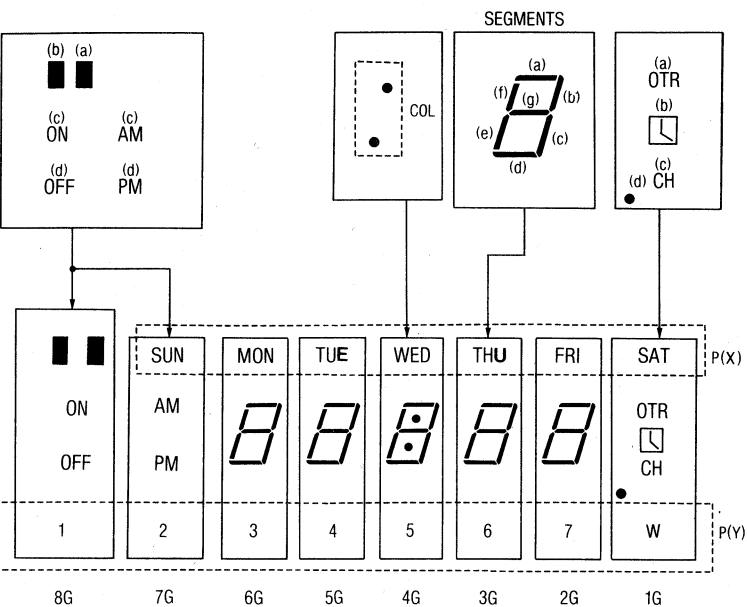
CALLOUTS NEXT TO WIRING POINTS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

CHANNEL SWITCHES SCHEMATIC DIAGRAM



VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.
TIMER DISPLAY TUBE IS FLASHING.

TIMER DISPLAY (DP7501)
CONNECTION CHART



PIN NO.	1	2	3	4	5	6	7	8	9	10
SIGNAL NAME	F	Y	8G	X	g	7G	f	6G	5G	4G

PIN NO.	11	12	13	14	15	16	17	18	19	20
SIGNAL NAME	e	d	3G	c	2G	b	a	1G	COL	F

VJBS0737

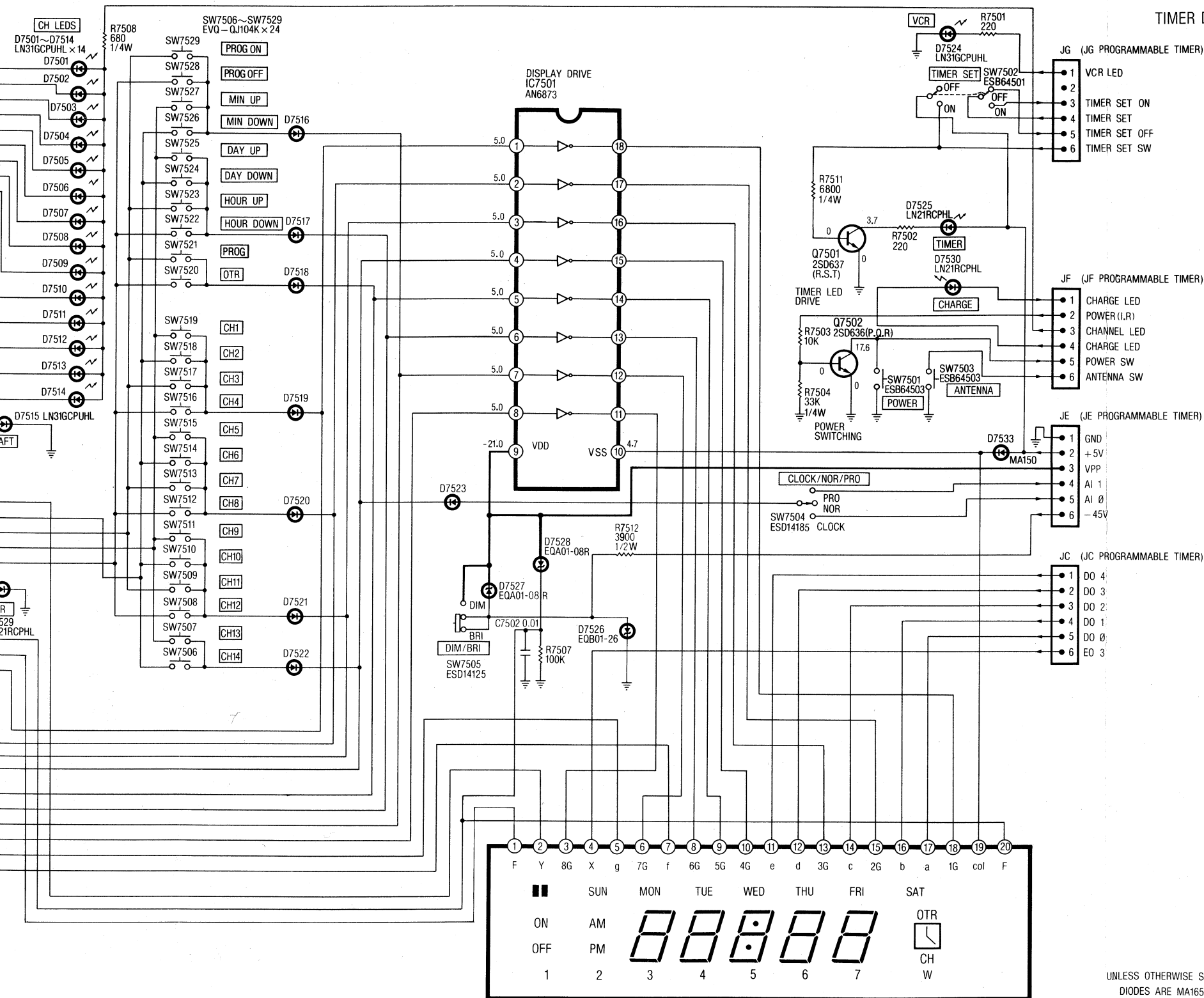
DP7501
VSL0010-A/B
DISPLAY TUBE

NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 7500 SERIES
SCHEMATIC DIAGRAM---R7502
(R7502 IS ABBREVIATED TO R2)

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

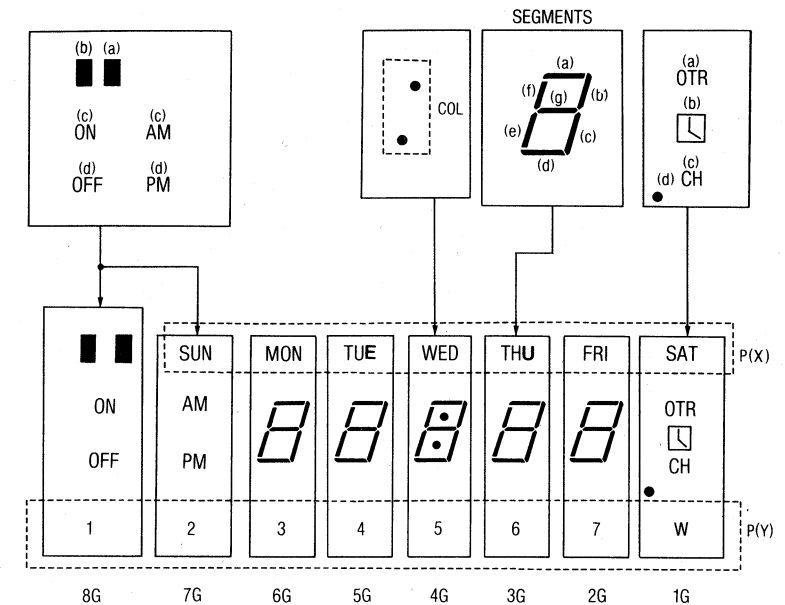
CHANNEL SWITCHES SCHEMATIC DIAGRAM



VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

TIMER DISPLAY TUBE IS FLASHING.

TIMER DISPLAY (DP7501)
CONNECTION CHART



PIN NO.	1	2	3	4	5	6	7	8	9	10
SIGNAL NAME	F	Y	8G	X	g	7G	f	6G	5G	4G

PIN NO.	11	12	13	14	15	16	17	18	19	20
SIGNAL NAME	e	d	3G	c	2G	b	a	1G	COL	F

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA165/ISS119 AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

VJBS0737

DP7501
VSL0010-A/B
DISPLAY TUBE

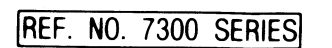
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 7500 SERIES
SCHEMATIC DIAGRAM---R7502
(R7502 IS ABBREVIATED TO R2)

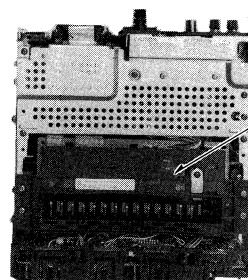
A diagram consisting of a vertical line. Two horizontal line segments intersect it. The upper segment is labeled with a bold black letter 'B' to its left. The lower segment is labeled with a bold black letter 'A' to its left.

1	CH4
2	CH3
3	CH2
4	CH1
5	AFT
6	GND

1	CH13
2	CH12
3	CH11
4	CH14
5	CH10
6	CH9
7	CH8
8	CH7
9	CH6
10	CH5

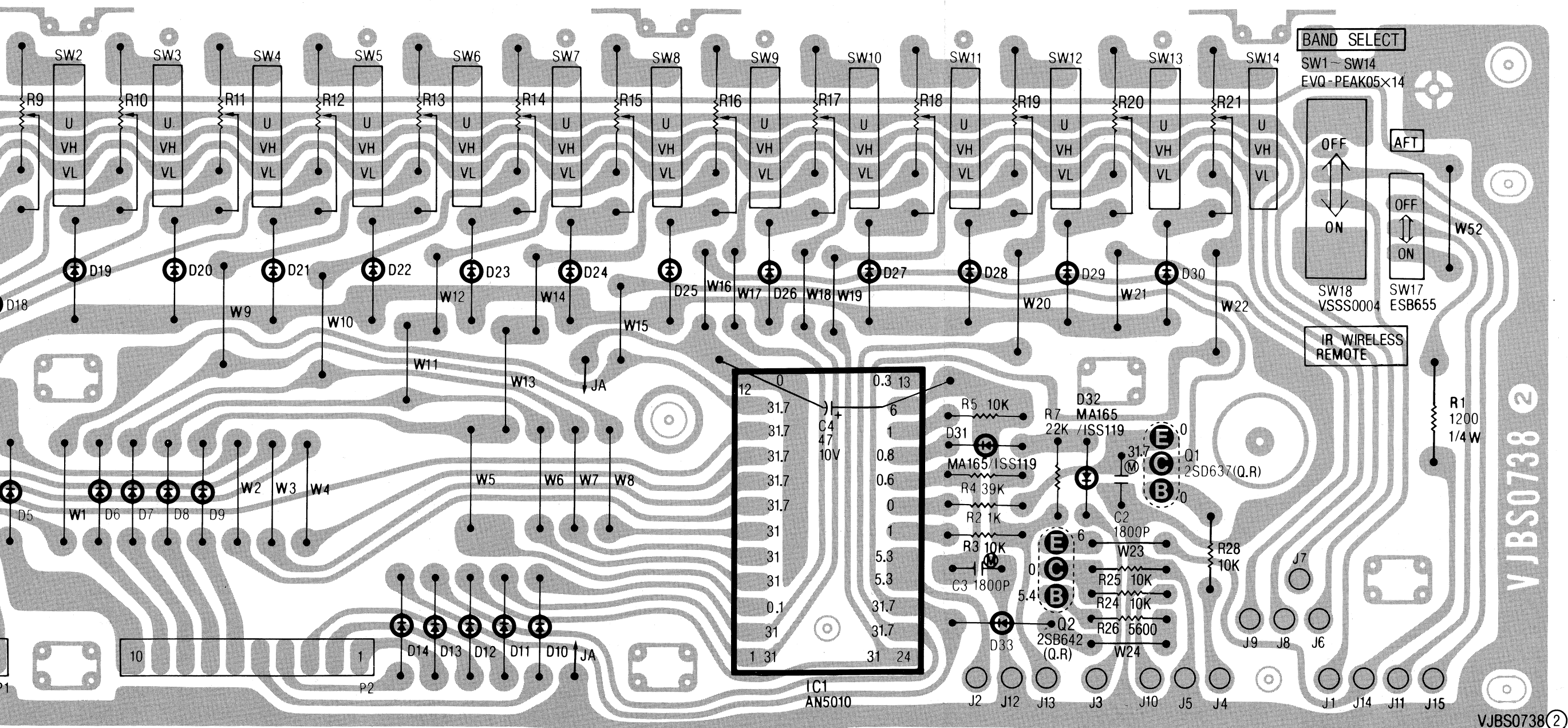
1	+12V(I,R)
2	SINS 
3	CH UP
4	CH RESET
5	GND
6	UHF
7	VHF 
8	VHF 
9	BT
10	CATV
11	AFT
12	GND
13	+6V
14	+12V
15	+12V(II,R)





Channel Selection & Potentiometer C.B.A.

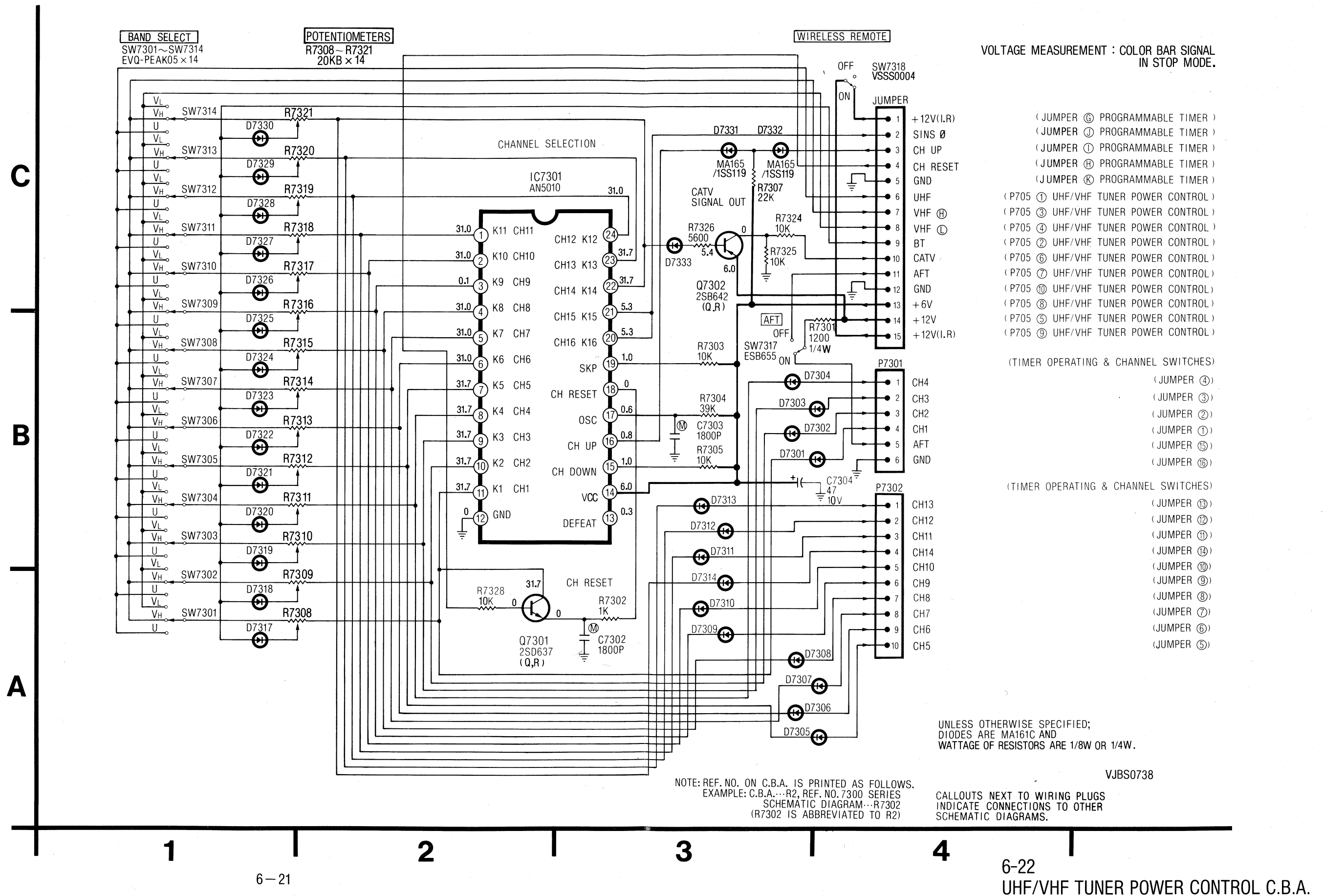
VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.



REF. NO. 7300 SERIES

UNLESS OTHERWISE SPECIFIED;
DIODES ARE MA161C AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

CHANNEL SELECTION & POTENTIOMETER SCHEMATIC DIAGRAM



UHF/VHF TUNER POWER CONTROL C.B.A. VEPS00177A

P704

1	AFT DEFEAT
2	TV/VCR

P705

1	UHF
2	BT
3	VHF (H)
4	VHF (L)
5	+12V
6	CATV
7	AFT
8	+6V
9	+12V(I.R)
10	GND

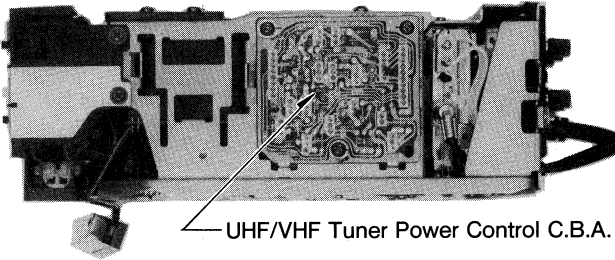
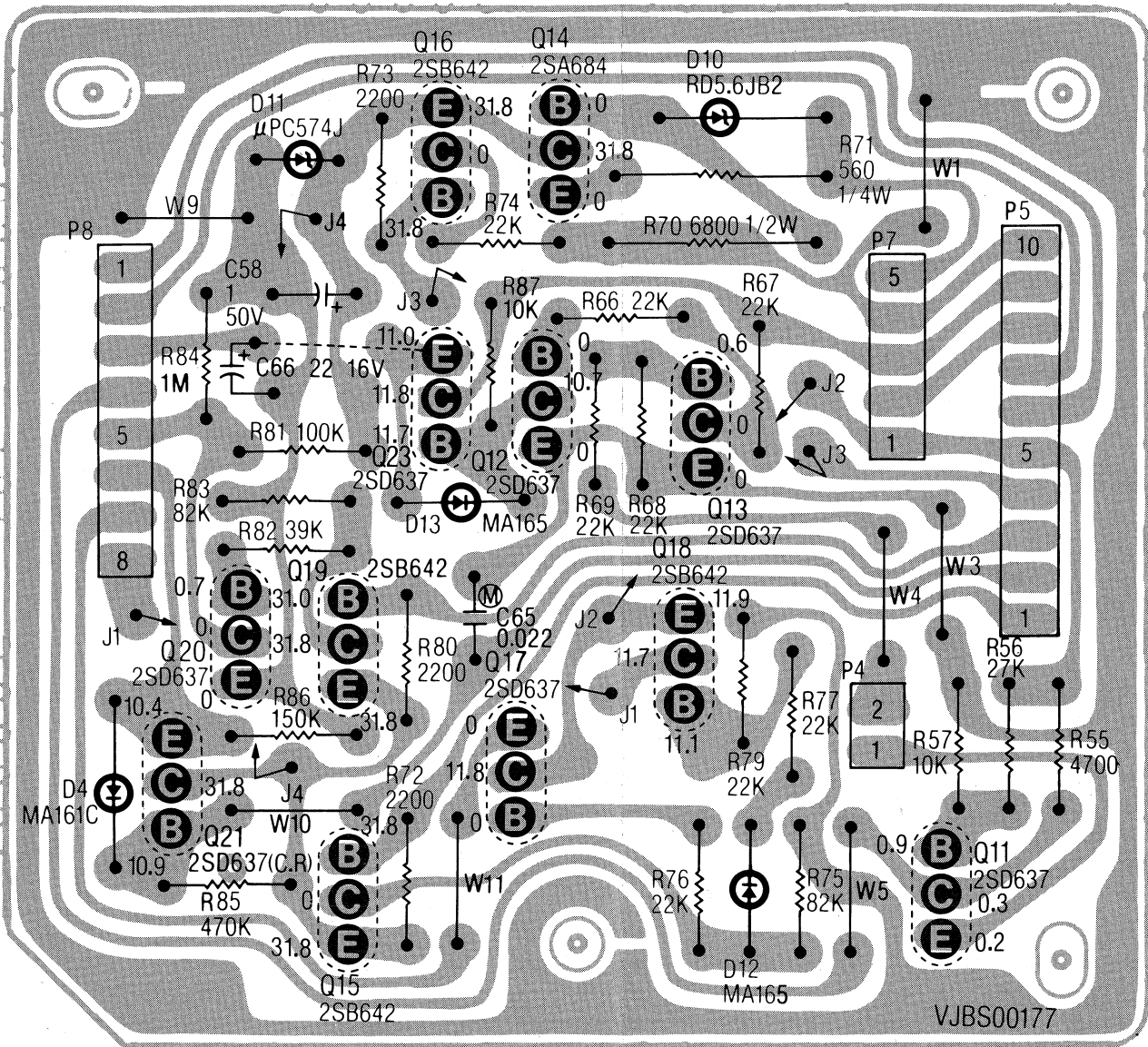
P707

1	+12V
2	+6V
3	+12V(I.R)
4	GND
5	+45V

P708

1	CATV
2	AFT
3	TV/VCR
4	AFT DEFEAT
5	BS
6	BT
7	BU
8	BV

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.



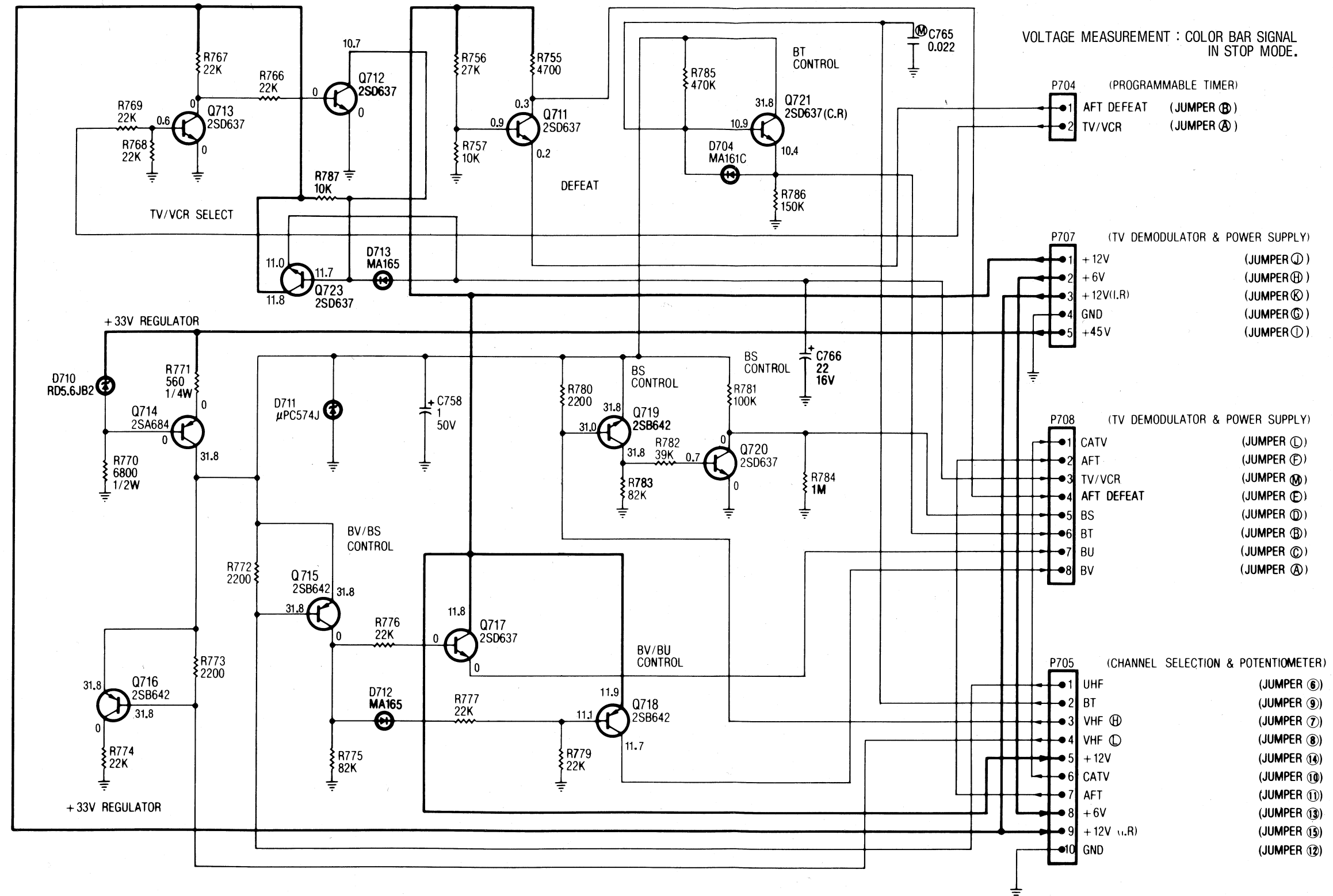
UHF/VHF TUNER
POWER CONTROL
C.B.A.

Q11	A-3
Q12	B-2
Q13	B-2
Q14	B-2
Q15	A-2
Q16	B-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	A-2
Q21	A-2
Q23	B-2

UNLESS OTHERWISE SPECIFIED;
TRANSISTOR RANKS ARE Q,R OR S AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

REF. NO. 700 SERIES

UHF/VHF TUNER POWER CONTROL SCHEMATIC DIAGRAM



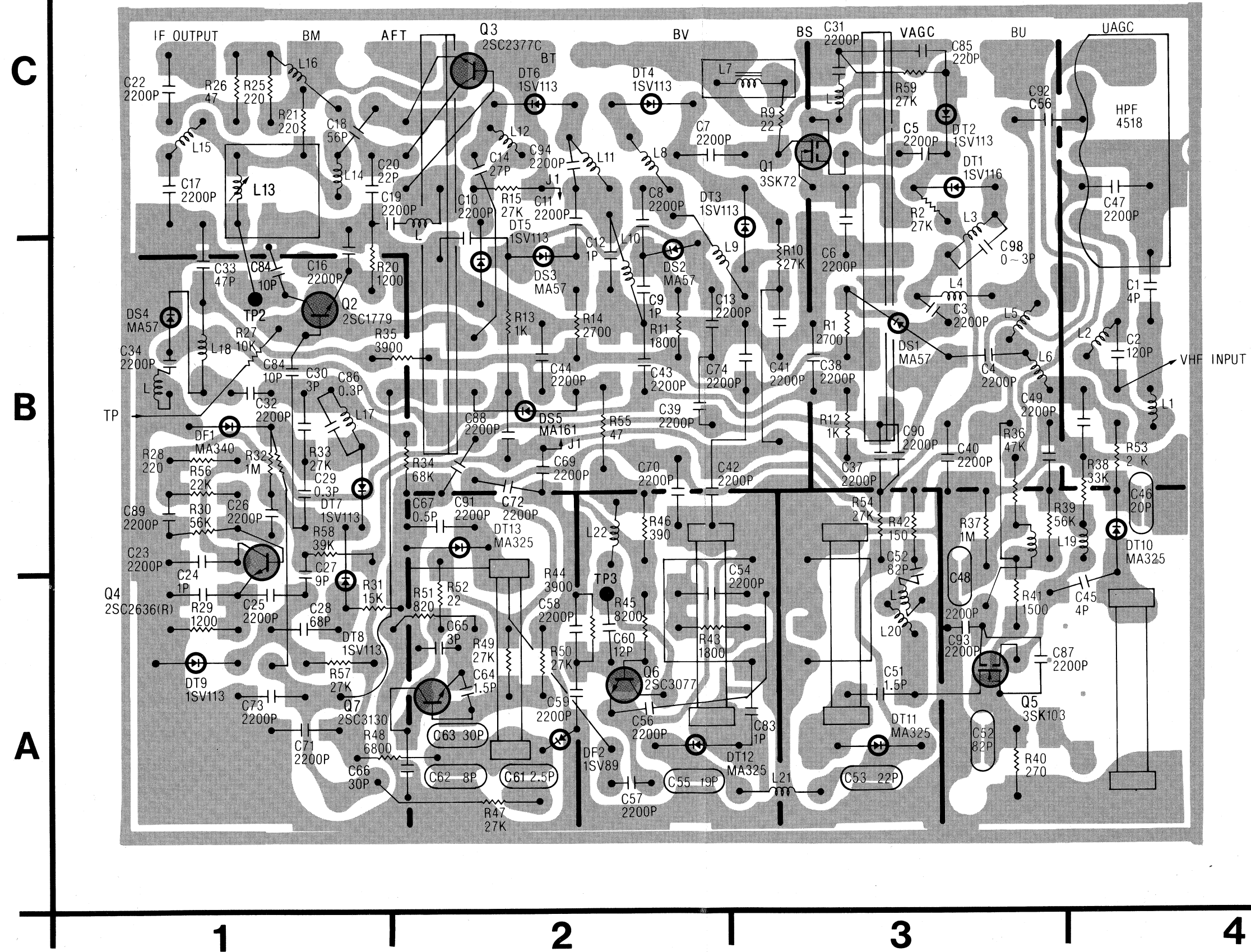
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A. R2, REF. NO. 700 SERIES
SCHEMATIC DIAGRAM R702
(R702 IS ABBREVIATED TO R2)

UNLESS OTHERWISE SPECIFIED;
TRANSISTOR RANKS ARE Q,R OR S AND
WATTAGE OF RESISTORS ARE 1/8W OR 1/4W.

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

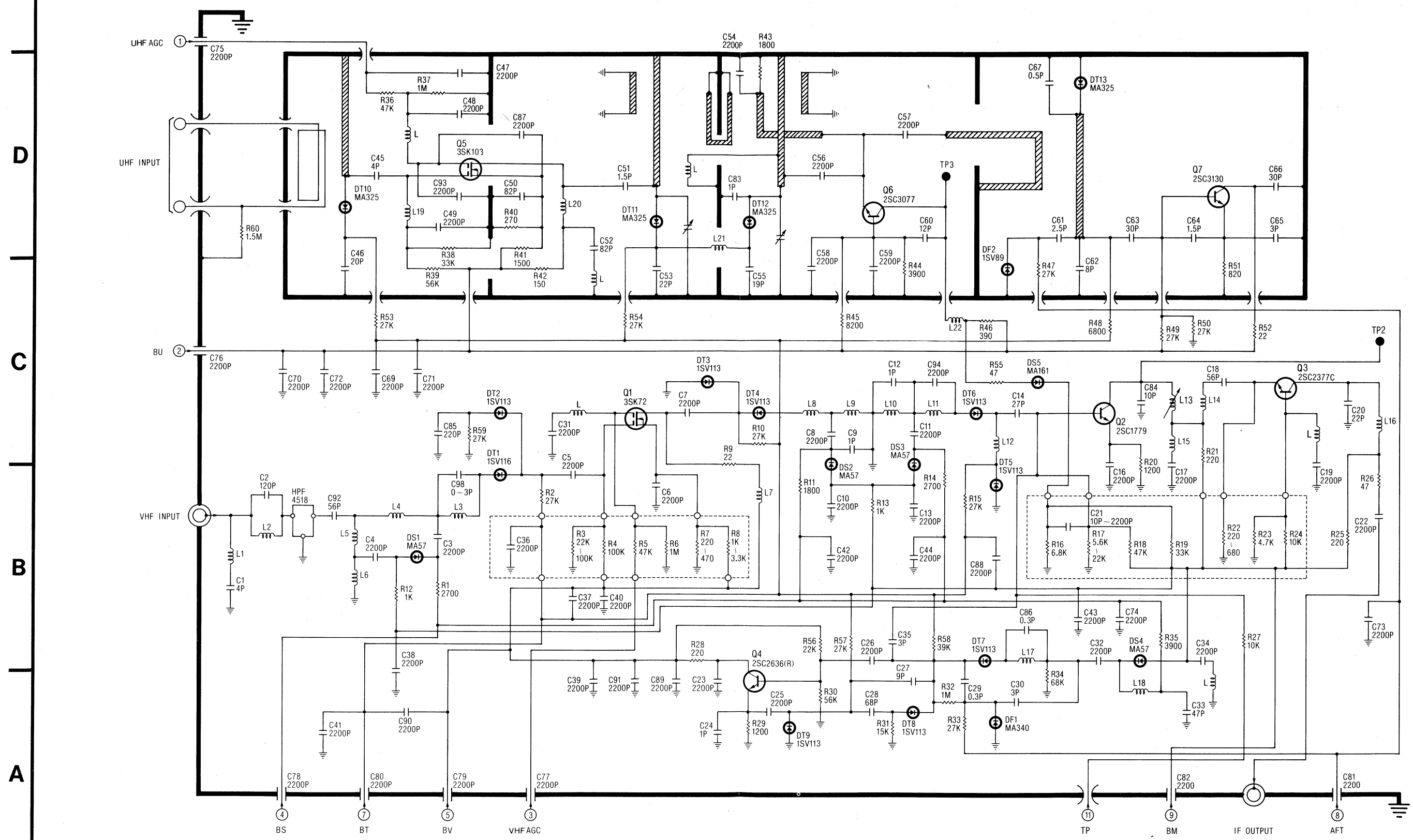
VJBS00177

UHF/VHF TUNER UNIT TNV56751F2

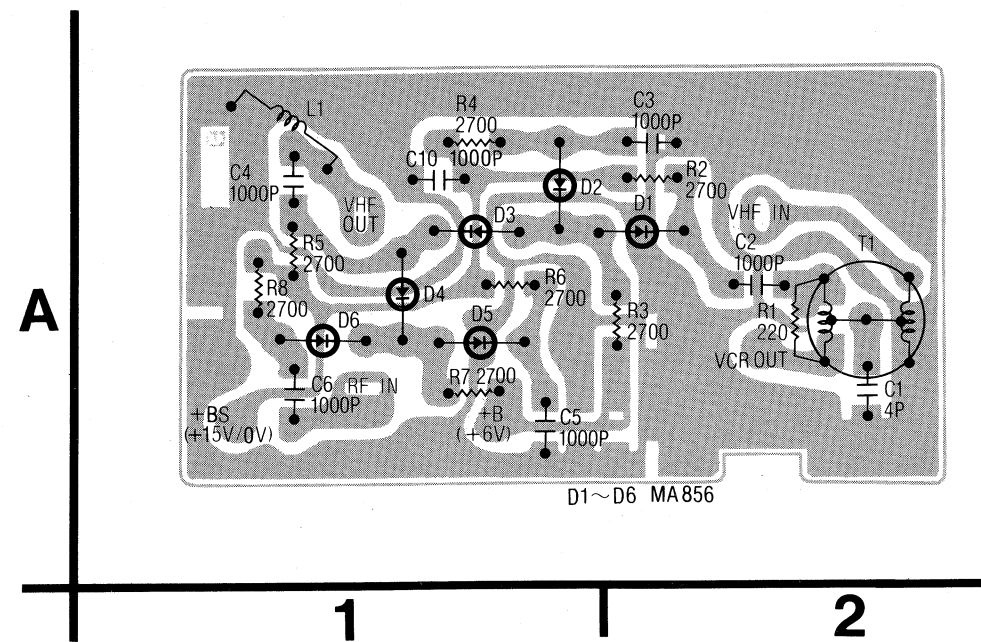


UHF/VHF TUNER UNIT	
Q1	C-3
Q2	B-1
Q3	C-2
Q4	B-1
Q5	A-3
Q6	A-2
Q7	A-2

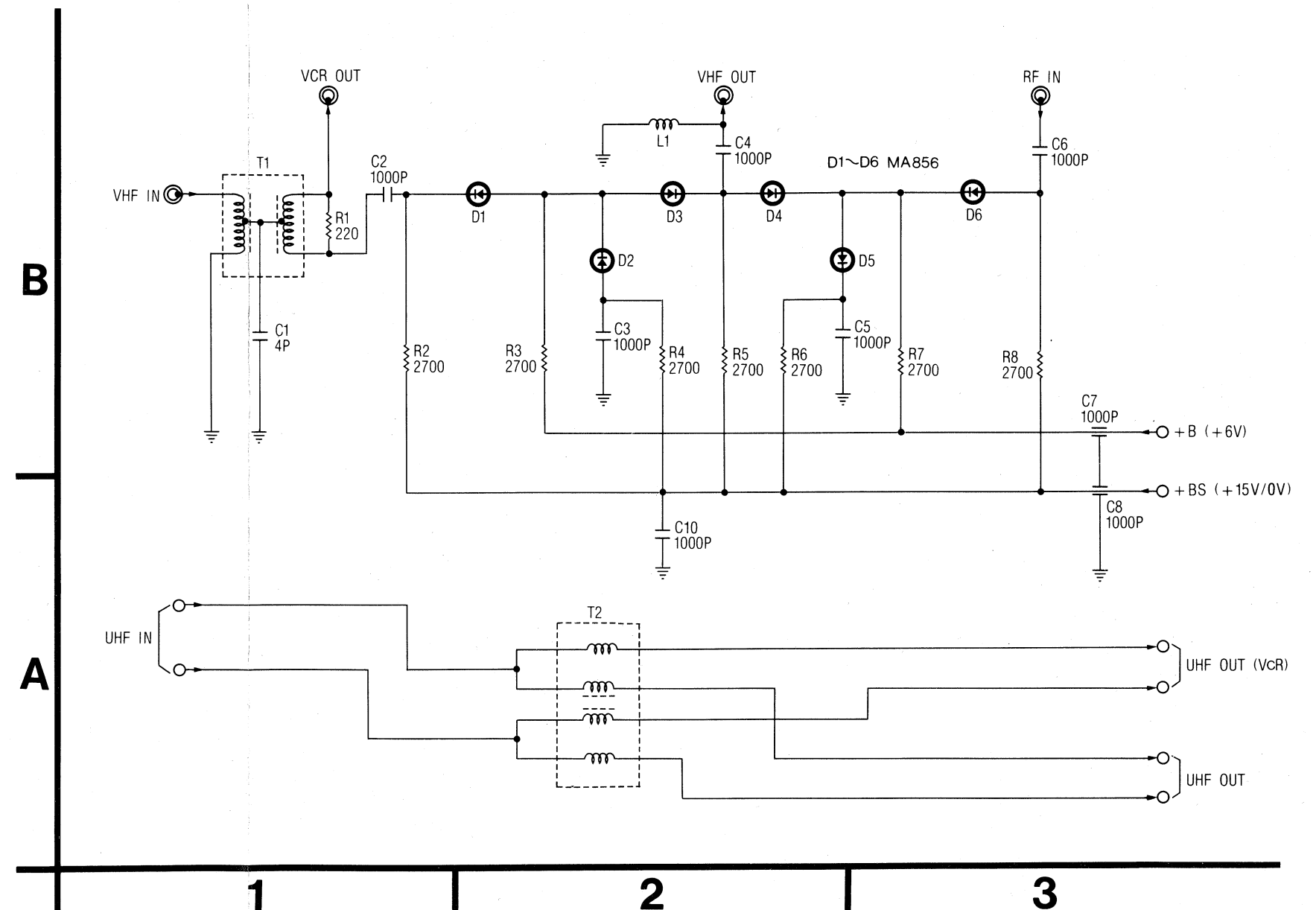
UHF/VHF TUNER SCHEMATIC DIAGRAM TNV56751F2



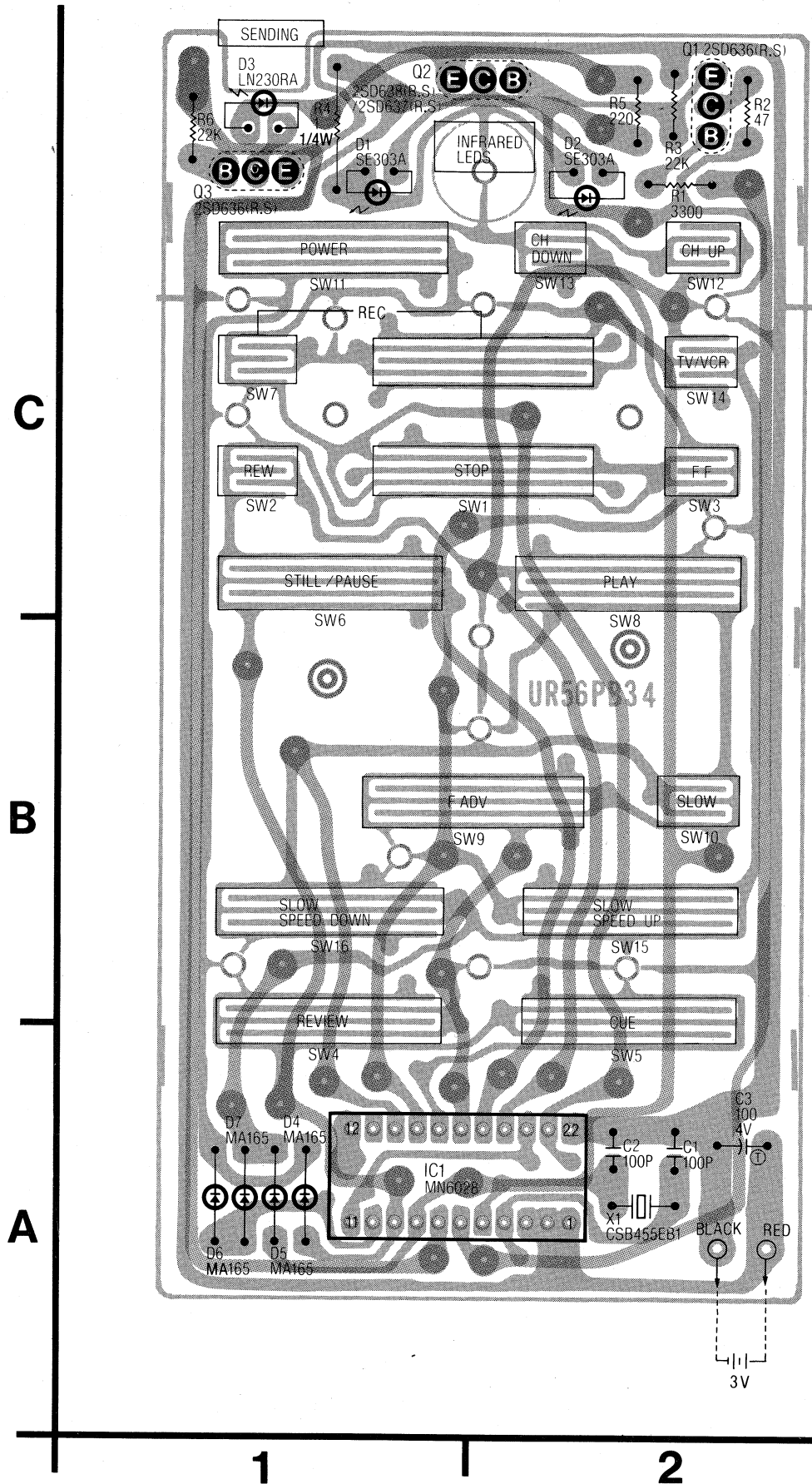
ANTENNA TERMINAL UNIT ENPD613



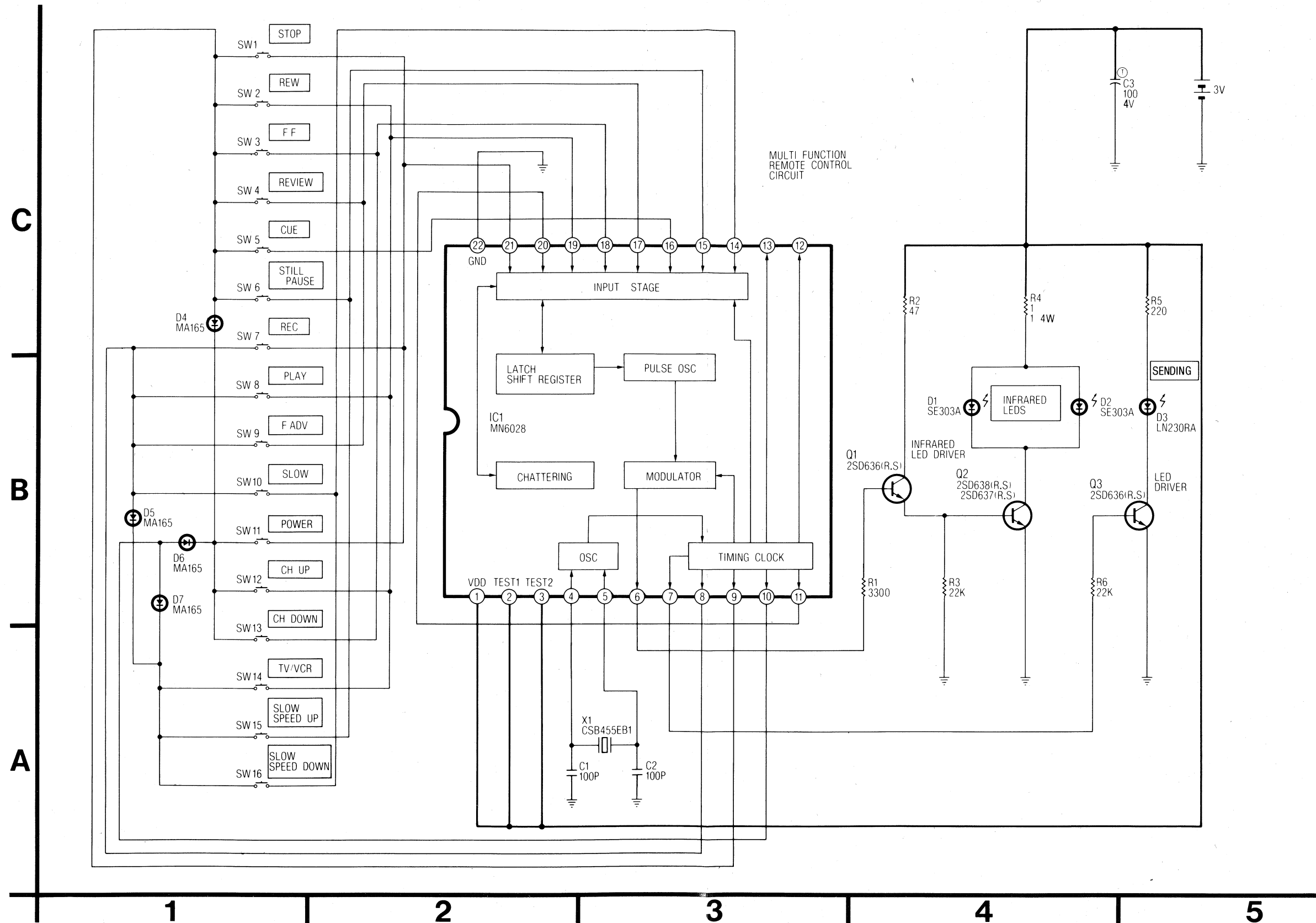
ANTENNA TERMINAL SCHEMATIC DIAGRAM ENPD613



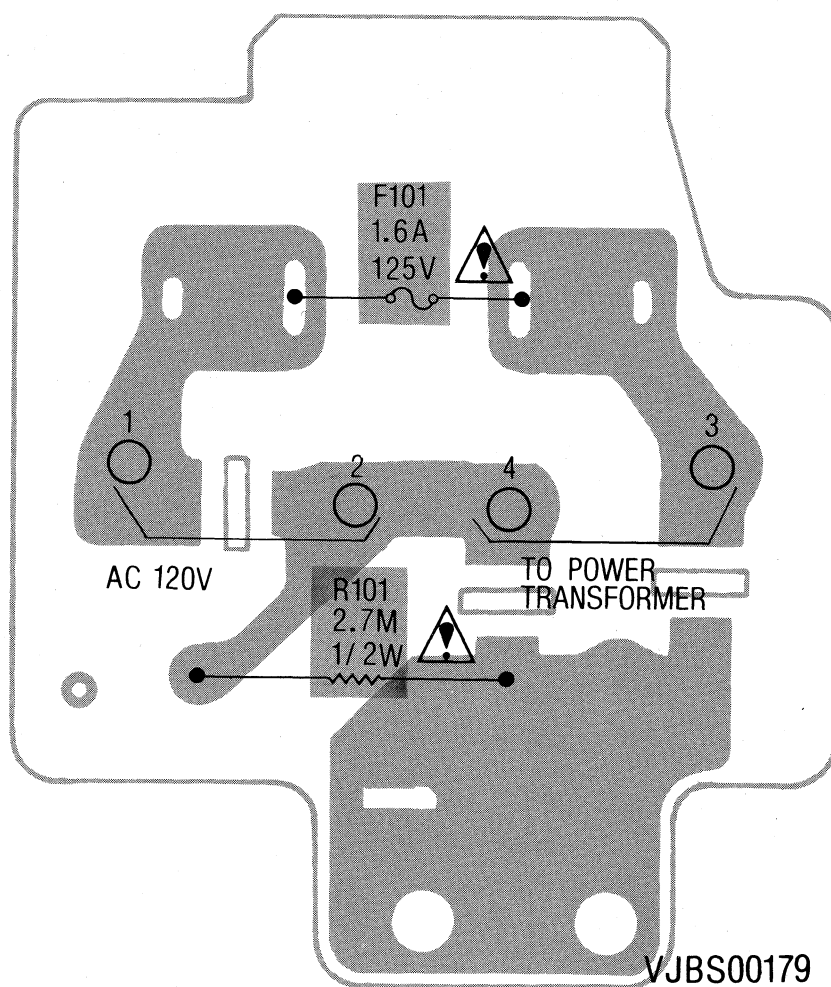
IR WIRELESS TRANSMITTER UNIT



IR WIRELESS TRANSMITTER SCHEMATIC DIAGRAM

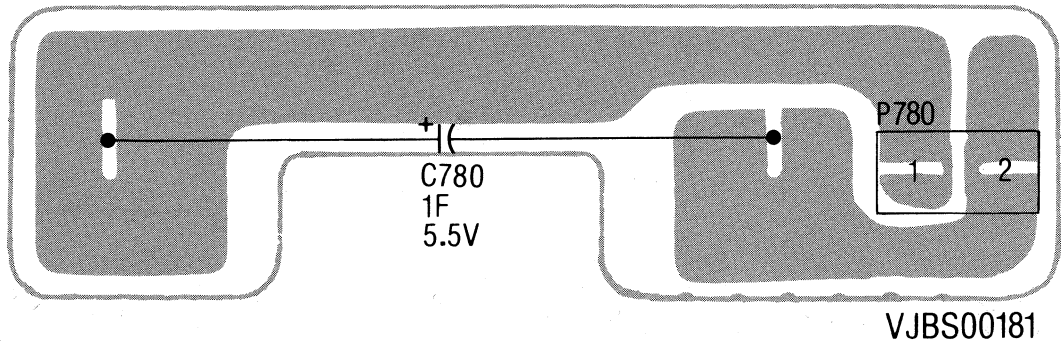


FUSE C.B.A. VEPS00179A1



IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.

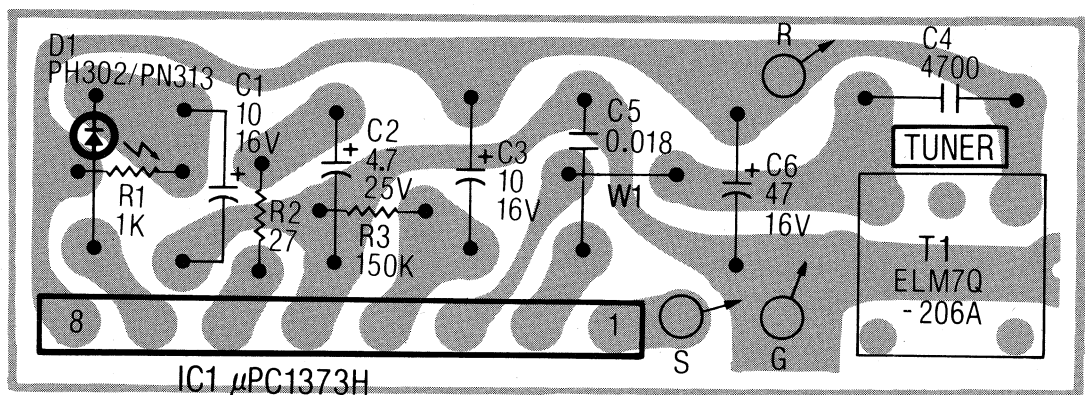
TIMER BACKUP CAPACITOR C.B.A. VEPS00181A1



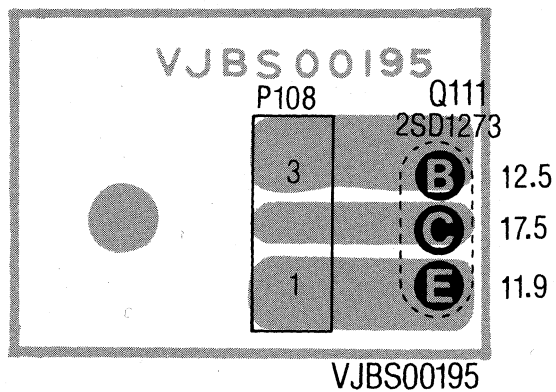
P780

1	BACK UP ⊕
2	GND

IR REMOTE RECEIVING DETECTOR UNIT EUR3613



POWER TR C.B.A. VEPS00195

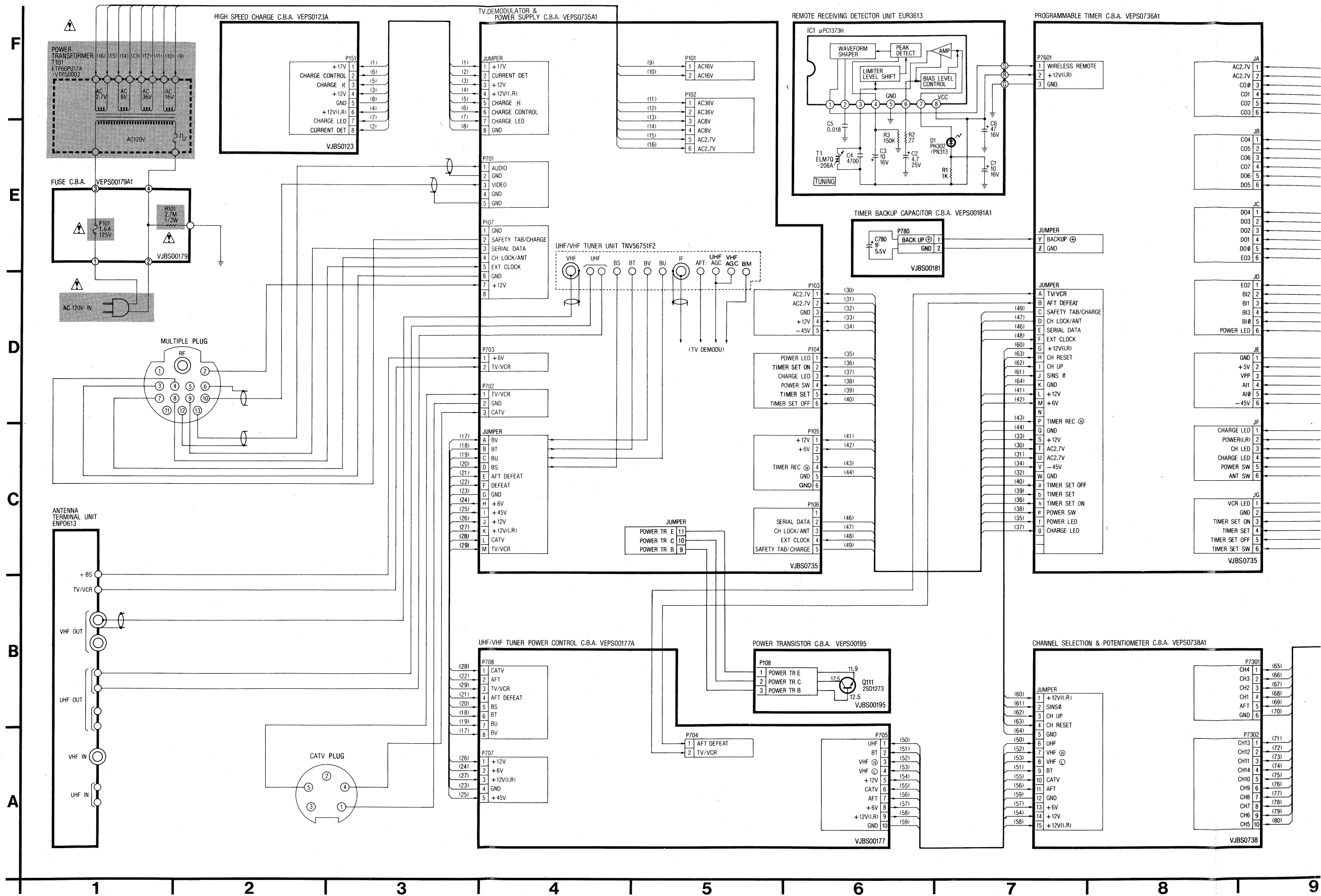


P108

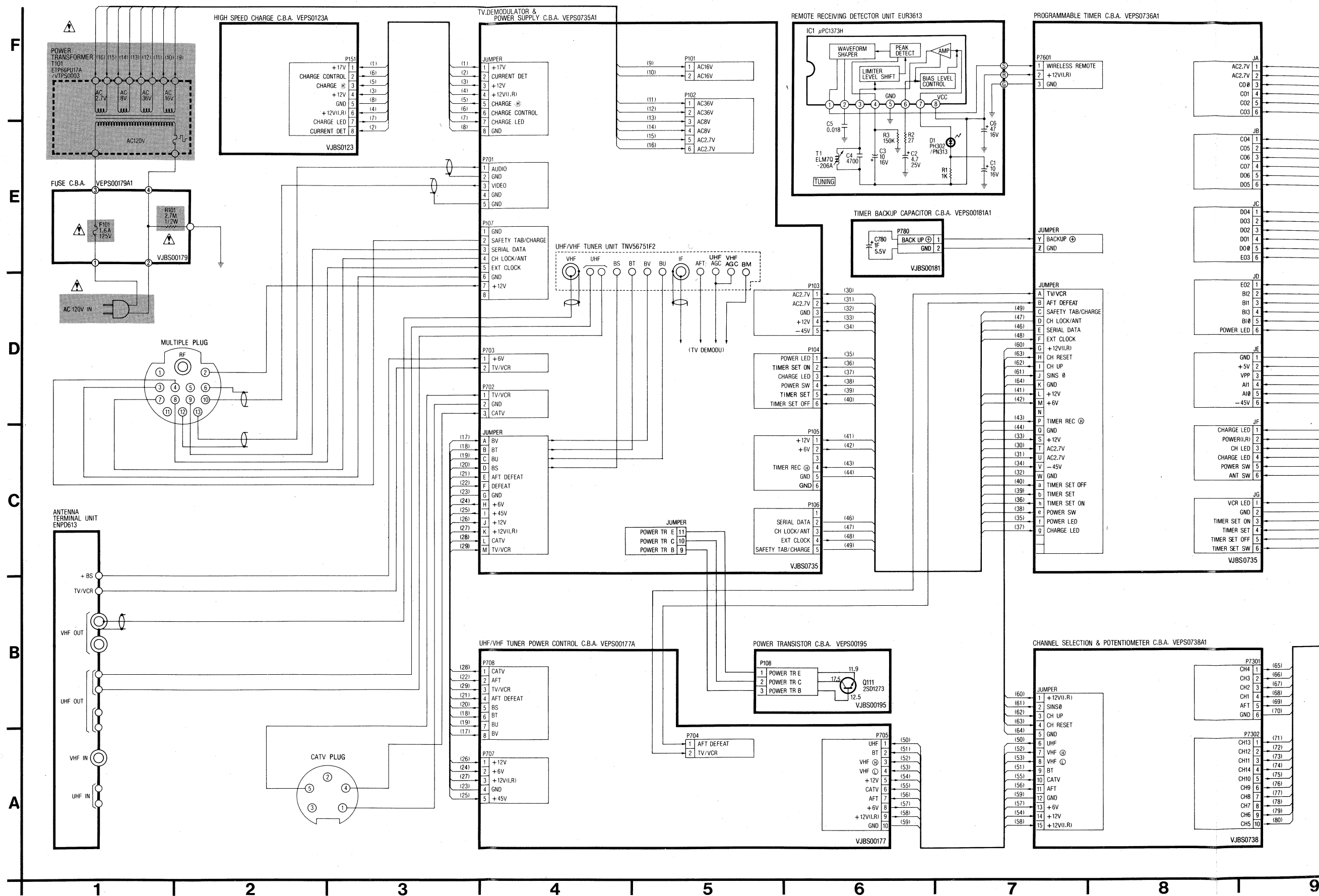
1	POWER TR E
2	POWER TR C
3	POWER TR B

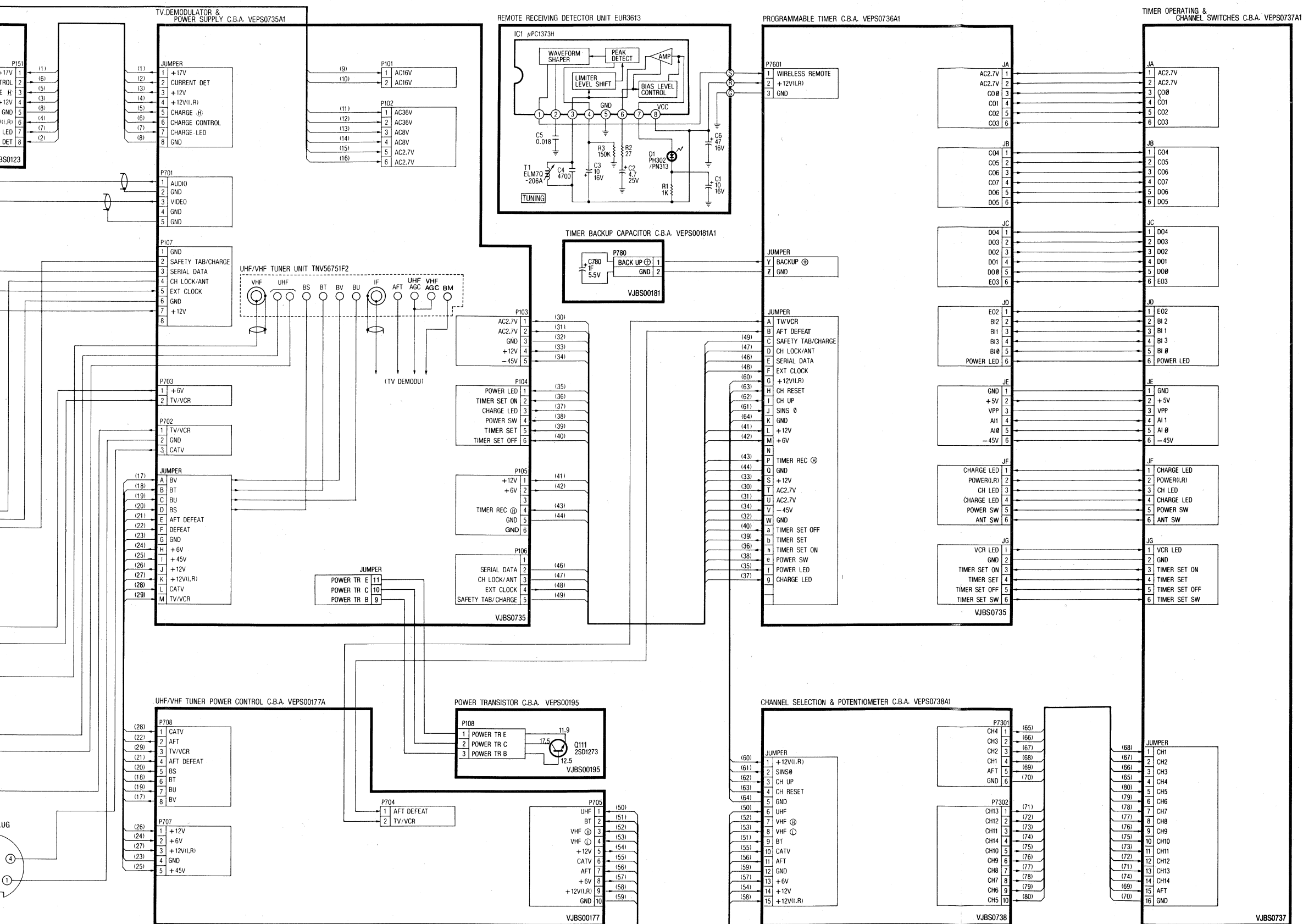
VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

INTERCONNECTION SCHEMATIC DIAGRAM



INTERCONNECTION SCHEMATIC DIAGRAM

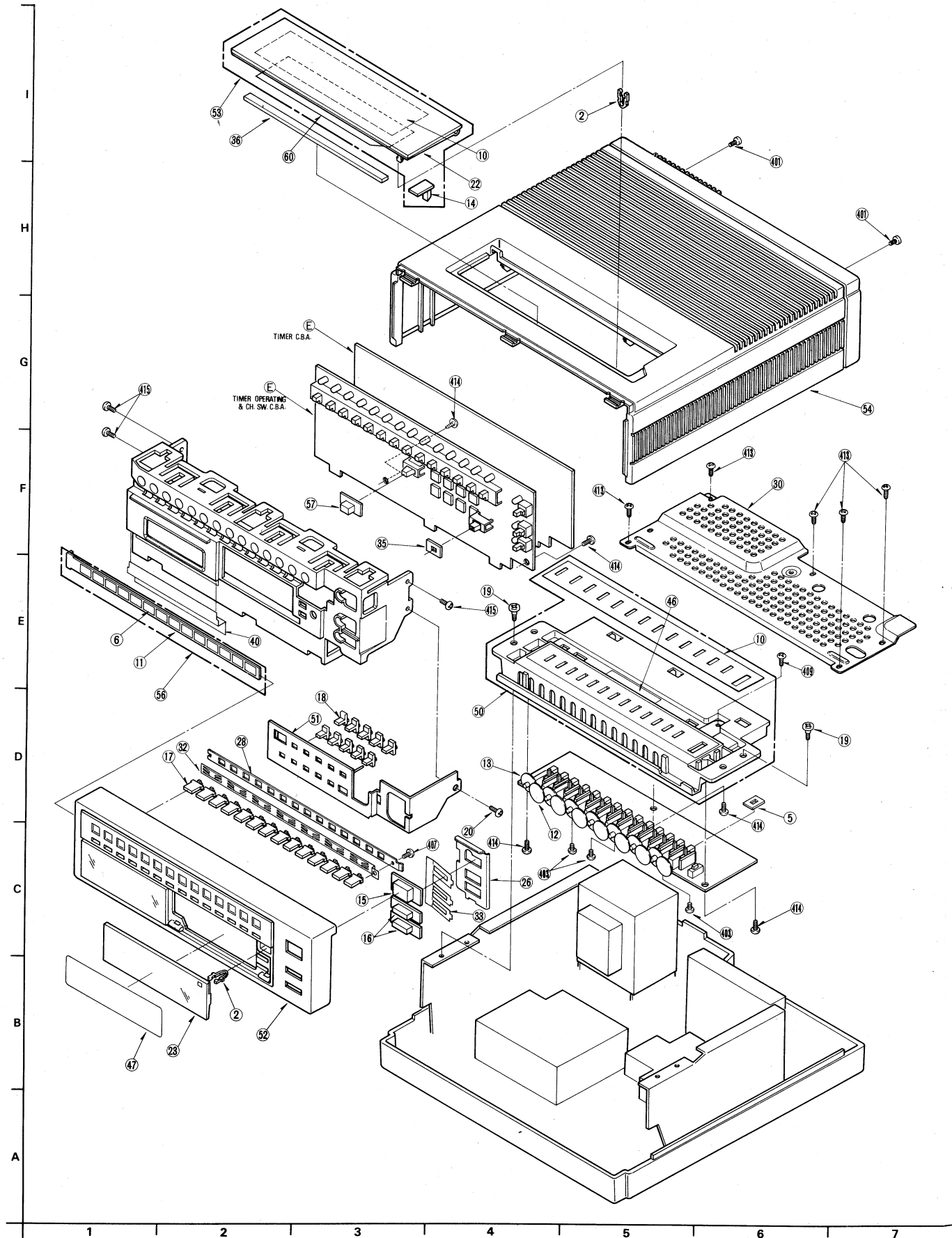




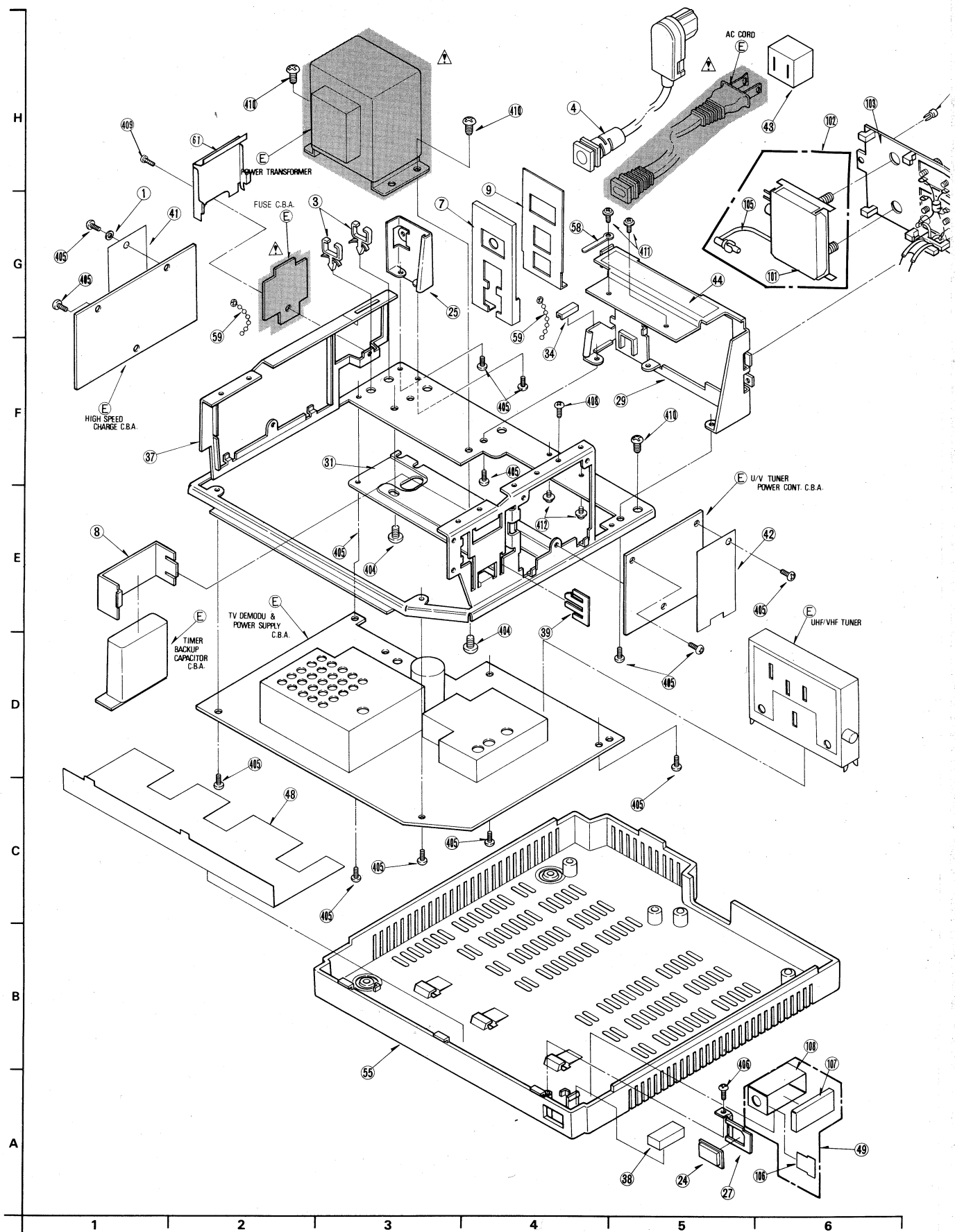
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

VOLTAGE MEASUREMENT : COLOR BAR SIGNAL
IN STOP MODE.

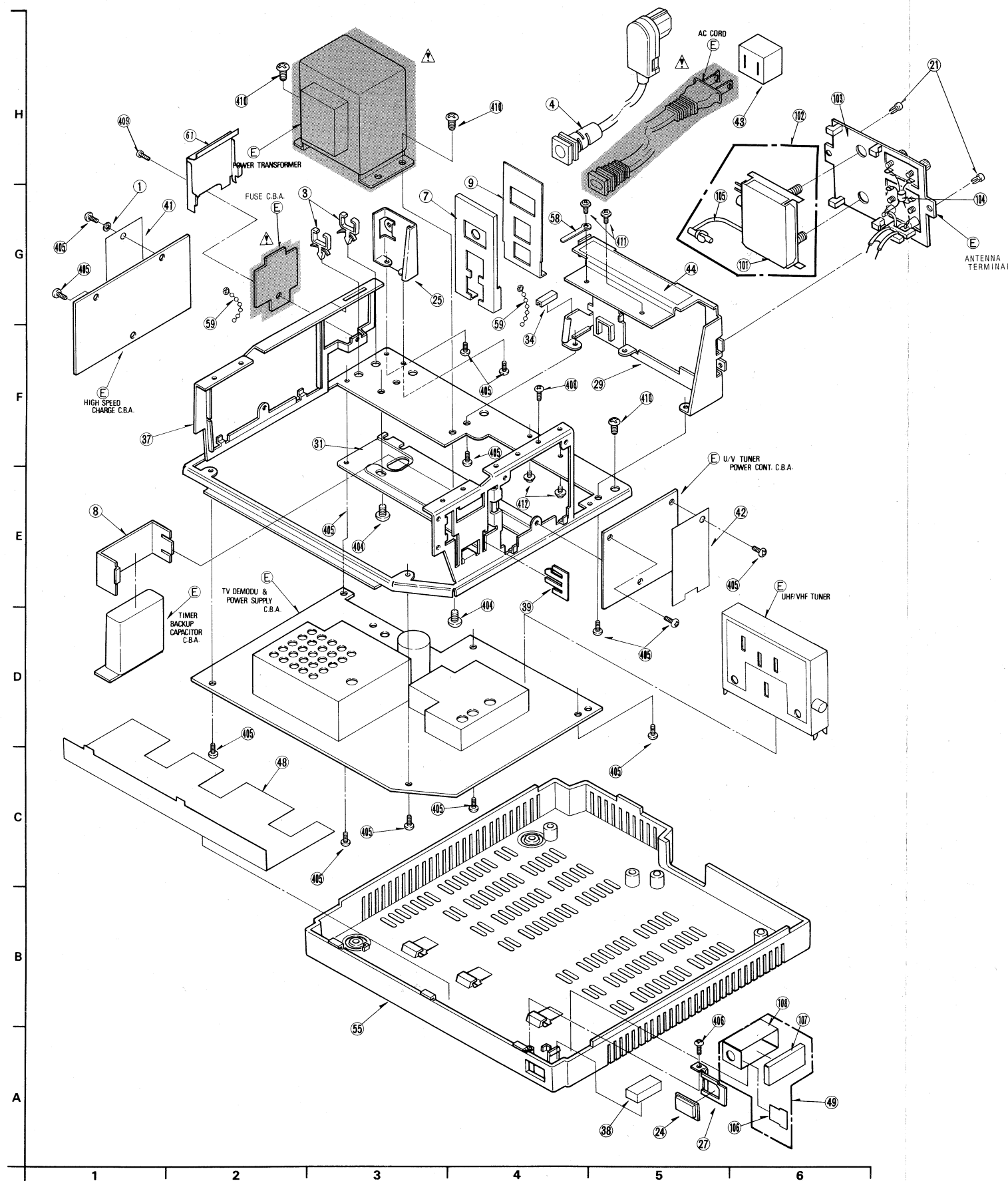
EXPLODED VIEWS **1** Casing Parts Section



2 Programmable Timer/Tuner Section

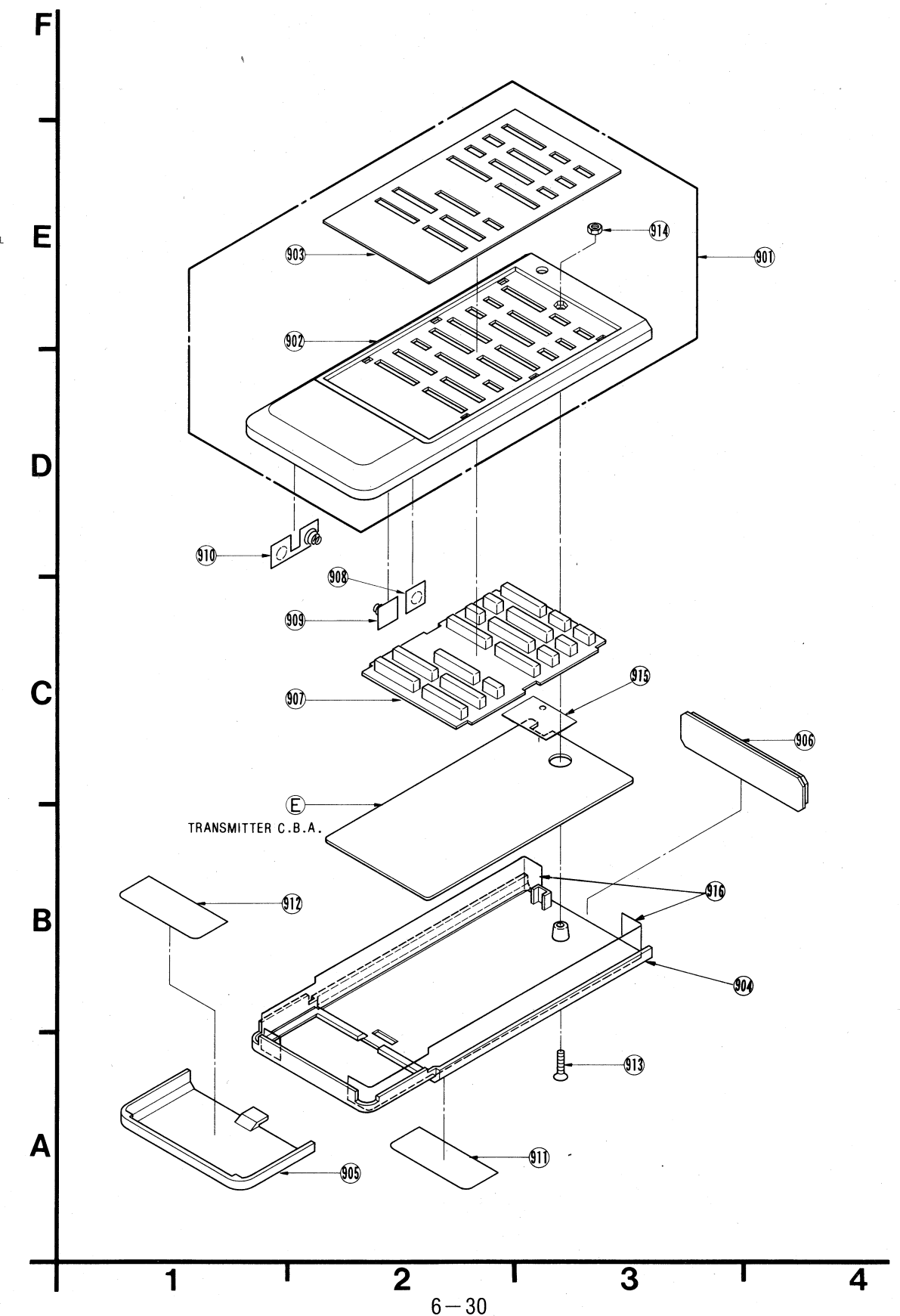


② Programmable Timer/Tuner Section



③ Transmitter Section

IMPORTANT SAFETY NOTICE;
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE
ONLY THE SPECIFIED PARTS.



MECHANICAL REPLACEMENT PARTS LIST

Model No. PV-A500

Notes: *Be sure to make your orders of replacement parts according to this list.
Since all parts are available, availability column indicates no mark.

Item No.	Drawing No.	Description	Pcs/ Set	Availability	Part No.	Remark
1	2	WASHER	1		QKJK1073	
2	1	DOOR CLAMPER	2		TKK769906	
3	2	CLAMPER	2		TMM76437	
4	2	ADAPTOR CABLE	1		VECS0083	
5	1	IR SELECT SWITCH COVER	1		VGFS0023	
6	1	VHF CHANNEL FILM	1		VGKS0453	
7	2	POWER CORD FIXING PIECE	1		VGMS0008	
8	2	TIMER BACKUP CAPACITOR	1		VGMS0011	
9	2	C.B.A. ANGLE				
9	2	POWER CORD PLATE	1		VGNS0412	
10	1	TUNING V.R. CASE DECORATION	1		VGNS0417	
11	1	FILM HOLDER	1		VGQS0159	
12	1	TUNING V.R KNOB (A)	7		VGTS0063	
13	1	TUNING V.R KNOB (B)	7		VGTS0064	
14	1	A.F.T SWITCH KNOB	1		VGTS0065	
15	1	POWER SWITCH BUTTON	1		VGUS0148	
16	1	TIMER & TV/VCR SELECT SW BUTTON	2		VGUS0149	
17	1	CHANNEL BUTTON	14		VGUS0150	
18	1	TIMER OPERATION BUTTON	10		VGUS0152	
19	1	SCREW	2		VHDS0012	
20	1	SCREW	1		VHDS0013	
21	2	PLASTIC RIVET	2		VHN0011	
22	1	TUNING DOOR	1		VKFS0087	
23	1	TIMER DOOR	1		VKFS0088	
24	2	FILTER PLATE	1		VKMS0025	
25	2	TOP COVER ANGLE (L)	1		VMAS0610	
26	1	BUTTON SUPPORT ANGLE	1		VMAS0611	
27	2	FILTER PLATE ANGLE	1		VMAS0613	
28	1	CHANNEL BUTTON STOPPER	1		VMAS0614	
29	2	POWER CORD ANGLE	1		VMAS0615	
30	1	CHASSIS SUPPORT PLATE	1		VMAS0635	
31	2	CHASSIS SUPPORT PLATE (A)	1		VMAS0666	
32	1	CHANNEL BUTTON GROUNDING SPRING	1		VMBS0133	
33	1	RETURN SPRING	1		VMBS0202	
34	2	PLASTIC EDGE	1		VMES0013	
35	1	SWITCH COVER	1		VMF0195	
36	1	TUNING DOOR CUSHION	1		VMGS0019	
37	2	MAIN CHASSIS	1		VMKS0026	
38	2	CUSHION	1		VMTS0022	
39	2	TIMER BACKUP CAPACITOR HOLDER	1		VMXS0104	
40	1	DISPLAY TUBE BARRIER	1		VMZS0063	
41	2	HIGH SPEED CHARGE C.B.A BARRIER	1		VMZS0064	
42	2	TUNER P.B BARRIER	1		VMZS0065	
43	2	PLUG COVER	1		VPN0428	
44	2	FUSE CAUTION LABEL	1		VQLS0453	
45						
46	1	SERVICE CAUTION LABEL	1		VQLS0473	
47	1	TUNER STICKER	1		VQLS0491	
48	2	BOTTOM SHIELD PLATE	1		VSCS0169	
49	2	IR WIRELESS RECEIVING DETECTOR UNIT	1		VSQS0115	
50	1	TUNING V.R CASE UNIT	1		VYBS0070	

Item No.	Drawing No.	Description	Pcs/ Set	Availability	Part No.	Remark
51	1	FRONT BRACKET UNIT	1		VYBS0071	
52	1	FRONT PANEL 1 UNIT	1		VYPS1034	
53	1	TUNING DOOR UNIT	1		VYPS1037	
54	1	TOP CASE 1 UNIT	1		VYPS1039	
55	2	BOTTOM CASE 1 UNIT	1		VYPS1042	
56	1	FILM HOLDER UNIT	1		VYQS0018	
57	1	TIMER OPERATING KNOB	1		VGTS0067	
58	2	CLAMPER	1		VJR3	
59	2	FASTENER	2		WZBV1	
60	1	TUNING CAUTION LABEL	1		VQLS0419	
61	2	FUSE C.B.A. BARRIER	1		VHZS0075	
101	2	SHIELD COVER	1		CVS85AD03TW	
102	2	VHF BOX UNIT	1		ENCVCVA046D	
103	2	ANTENNA TERMINAL ASS'Y	1		ENCSCPA022D	
104	2	BALLOON CORD	1		ENCTRBA006D	
105	2	PIN JACK ASS'Y	1		ENCWKPA125D	
106	2	FILTER PLATE	1		UR36FT28	
107	2	SHIELD CASE (TOP)	1		UR36SC17	
108	2	SHIELD CASE (BOTTOM)	1		UR36SC18	

ELECTRICAL REPLACEMENT PARTS LIST

Model No. PV-A500

Note:
 1. Be sure to make your orders of replacement parts according to this list.
 2. IMPORTANT SAFETY NOTICE
 Components identified by shade have special characteristics important for safety. When replacing any of these components, use only the original ones.
 3. Unless otherwise specified:
 All resistors are in OHMS (Ω), 1/8w, $\pm 5\%$ carbon, K=1,000 Ω , M=1,000K Ω .
 All capacitors are in MICROFARADS(μ F), $\pm 10\%$ P= μ F.
 All coils are in MICROHENRIES(μ H), m=10³ μ .
 4. C.B.A: Circuit Board Assembly.
 5. C.B: Circuit Board.

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
	VEPS0735A1	TV DEMODULATOR & POWER SUPPLY C.B.A.	1	
	VEPS00177A	UHF/VHF TUNER POWER CONTROL C.B.A.	1	
	VEPS0738A1	CHANNEL SELECTION & POTENTIOMETER C.B.A.	1	
	VEPS0736A1	PROGRAMMABLE TIMER C.B.A.	1	
	VEPS0737A1	TIMER OPERATING & CHANNEL SWITCHES C.B.A.	1	
	VEPS0123A	HIGH SPEED CHARGE C.B.A.	1	
	VEPS00179A1	FUSE C.B.A.	1	
	VEPS00181A1	TIMER BACKUP CAPACITOR C.B.A.	1	
	VEPS00195	POWER TRANSISTOR C.B.A.	1	
	UR36VPB7	IR RECEIVING DETECTOR C.B.A.		
	UR56VPB14	IR TRANSMITTER C.B.A.	1	
		TV DEMODULATOR & POWER SUPPLY C.B.A.		
		Power Supply Section		
		Integrated Circuits		
IC101	VCRS0010		1	
IC102	AN7806 or HA17806P		1	
		Transistors		
Q101	2SD888		1	
Q102	2SA720(Q,R,S)		1	
Q103	2SD636(Q,R,S)		1	
Q105	2SD1205		1	
Q106,107	2SD637(Q,R,S)		2	
Q108	2SD946		1	
Q109	2SC1318A(Q,R,S)		1	
Q110	2SD637(Q,R,S)		1	
Q112	2SA777(Q,R,S)		1	
		Diodes		
D101	RB602		1	
D102	MI-152A		1	
D103	MI-152RA		1	
D104	MI-152A		1	
D105,106	EMI2		2	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
D107	ERC81-004L7		1	
D108	RD3.6EL1 or RD3.6EL2	Zener	1	
D109,110	RD5.1JB1 or RD5.1JB2	Zener	2	
D111-113	MA165 or 1SS119		3	
D115,116	MA165 or 1SS119		2	
D118	RD13EB2 or RD13EB3	Zener	1	
D119	MA162		1	
D120	MA165 or 1SS119		1	
D121	RD13EB2 or RD13EB3	Zener	1	
D122-124	MA165 or 1SS119		3	
D125-128	MA161		4	
D129-132	MA165 or 1SS119		4	
D133	RD8.2EB	Zener	1	
D134	MA161		1	
D135	MA150		1	
		Resistors		
R102	ERD25FJ331	1/4W 330	1	
R103	ERD25FJ330	1/4W 33	1	
R104	ERD25FJ100	1/4W 10	1	
R105	ERD10TJ684 or ERDS2TJ684	680K 1/4W 680K	1	
R106	ERD10TJ222 or ERDS2TJ222	2.2K 1/4W 2.2K	1	
R107	ERF3AKR39	Wirewound Flame Proof 3W 0.39	1	
R108,109	ERD25FJ331	1/4W 330	2	
R110	ERD10TJ471 or ERDS2TJ471	470 1/4W 470	1	
R111	ERD10TJ333 or ERDS2TJ333	33K 1/4W 33K	1	
R112	ERD10TJ563 or ERDS2TJ563	56K 1/4W 56K	1	
R113	ERD10TJ392 or ERDS2TJ392	3.9K 1/4W 3.9K	1	
R114	EVN38CA00B14	Variable 10K	1	
R115	ERD10TJ153 or ERDS2TJ153	15K 1/4W 15K	1	
R116	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R117	ERD10TJ153 or ERDS2TJ153	15K 1/4W 15K	1	
R118	ERD10TJ683 or ERDS2TJ683	68K 1/4W 68K	1	
R119	ERD10TJ333 or ERDS2TJ333	33K 1/4W 33K	1	
R120	ERD10TJ683 or ERDS2TJ683	68K 1/4W 68K	1	
R121	ERGLANJ102H	Metal Oxide 1W 1K	1	
R122	ERD10TJ153 or ERDS2TJ153	15K 1/4W 15K	1	
R123	ERD25FJ100	1/4W 10	1	
R124	ERD25FJ331	1/4W 330	1	
R125	ERD25TJ103	1/4W 10K	1	
R126,127	ERD10TJ562 or ERDS2TJ562	5.6K 1/4W 5.6K	2	
R130	ERD10TJ332 or ERDS2TJ332	3.3K 1/4W 3.3K	1	
R131-134	ERD10TJ473 or	47K	4	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
	ERDS2TJ473	1/4W 47K		
R135	ERD10TJ332 or	3.3K	1	
	ERDS2TJ332	1/4W 3.3K		
R136	ERD10TJ222 or	2.2K	1	
	ERDS2TJ222	1/4W 2.2K		
R137	ERD25FJ101	1/4W 100	1	
R138	ERD10TJ223 or	22K	1	
	ERDS2TJ223	1/4W 22K		
R139,140	ERD10TJ153 or	15K	2	
	ERDS2TJ153	1/4W 15K		
R141	ERDS2TJ332	1/4W 3.3K	1	
R142	ERD10TJ681 or	680	1	
	ERDS2TJ681	1/4W 680		
R143	ERG2ANJ180H	Metal Oxide 2W 18	1	
R144	ERD10TJ333 or	33K	1	
	ERDS2TJ333	1/4W 33K		
R145	ERD10TJ473 or	47K	1	
	ERDS2TJ473	1/4W 47K		
R146,147	ERD10TJ333 or	33K	2	
	ERDS2TJ333	1/4W 33K		
R148	ERD25TJ153	1/4W 15K	1	
R149	ERD10TJ182 or	1.8K	1	
	ERDS2TJ182	1/4W 1.8K		
R150	ERD10TJ333 or	33K	1	
	ERDS2TJ333	1/4W 33K		
R190	ERDS1TJ821	1/2W 820	1	
		Capacitors		
C101,102	ECKW1H103ZF5	Ceramic 50V 0.01	2	
		+80% -20%		
C103	ECETS1V472U	Electrolytic 35V 4700	1	
C104	ECEA1HS2R2	Electrolytic 50V 2.2	1	
C105	ECEA1VF331	Electrolytic 35V 330	1	
C106	ECKW1H222ZF5	Ceramic 50V 0.0022	1	
		+80% -20%		
C107	ECEA25Z470	Electrolytic 25V 470	1	
C108	ECEA25Z330	Electrolytic 25V 330	1	
C109	ECEA0JS470	Electrolytic 6.3V 47	1	
C110	ECKW1H472ZF5	Ceramic 50V 0.0047	1	
		+80% -20%		
C111	ECQM1H102KZ or	Polyester 50V 0.001	1	
	ECQM1H102KV			
C112	ECEA0JS470	Electrolytic 6.3V 47	1	
C113	ECQM1H222JZ	Polyester 50V 0.0022	1	
		±5%		
C114	ECEA1CS101	Electrolytic 16V 100	1	
C115	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C116	ECEA1VS102	Electrolytic 35V 1000	1	
C117	ECEA50ZR33	Electrolytic 50V 0.33	1	
C118	ECEA1HS010	Electrolytic 50V 1	1	
C120	ECEA1VS330	Electrolytic 35V 33	1	
C121-124	ECEA1HS010	Electrolytic 50V 1	4	
C125	ECEA1VS220	Electrolytic 35V 22	1	
C126	ECEA1VS470	Electrolytic 35V 47	1	
C127	ECEA1CS101	Electrolytic 16V 100	1	
C128	ECKW2H103PE8	Ceramic 500V 0.01	1	
		+100% -0%		
C129	ECEA1JS471	Electrolytic 63V 470	1	
C130	ECEA1JS331	Electrolytic 63V 330	1	
C131,132	ECKW1H103ZF5	Ceramic 50V 0.01	2	
		+80% -20%		
C133	ECEA1CS102	Electrolytic 16V 1000	1	
C134	ECEA1AS101	Electrolytic 10V 100	1	
C135	ECKW1H102KB5	Ceramic 50V 0.001	1	
C136	ECKW1H470JC5	Ceramic 50V 47P	1	
		±5%		
C137	ECEA1HS010	Electrolytic 50V 1	1	
C138	ECEA1HK010	Electrolytic 50V 1	1	
C139	ECQV05104JZ	Polyester 50V 0.1	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		±5%		
C140	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C141	ECEA1HS010	Electrolytic 50V 1	1	
C142	ECEA1VS220	Electrolytic 35V 22	1	
C143	ECEA1CK100	Electrolytic 16V 10	1	
		Coils		
L101	TLT-060-109 or		1	
	TLU-060-109			
L102	ETS28K1A		1	
L103	TLT-060-109 or		1	
	TLU-060-109			
L104	VLQS66F470K		47pH	1
L105	TLQR33H126		0.33pH	1
		Pin Headers		
P102	VJPS1144		6P	1
P103	VJPS1143		5P	1
P104,105	VJPS1144		6P	2
P106	VJPS1143		5P	1
P107	VJPS1145		8P	1
		Fuse		
F102	XBALF60NU14A		6A	1
F103	XBALC10NU100		1A	1
		TV Demodulator Section		
		Integrated Circuits		
IC701	AN5215		1	
IC702	BN5115		1	
		Transistors		
Q701	2SD637(Q,R,S)		1	
Q702	2SB642(Q,R)		1	
Q703,704	2SD637(Q,R,S)		2	
Q710	2SD637(Q,R,S)		1	
		Diodes		
D701-703	MA165 or		3	
	1SS119			
D714	MA150		1	
D715	RD15EB	Zener	1	
D716	RD8.2EB	Zener	1	
D717	RD15EB	Zener	1	
D718	EQA02-14B or	Zener	1	
	RD15EB			
		Resistors		
R702	ERD10TJ333 or		33K	1
	ERDS2TJ333	1/4W	33K	
R703	ERD25FJ220	1/4W	22	1
R704	EVN38CA00B14	Variable	10K	1

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R705,706	ERD10TJ103 or	10K	2	
	ERDS2TJ103	1/4W 10K		
R707	ERD25TJ225	1/4W 2.2M	1	
R708	ERD10TJ472 or	4.7K	1	
	ERDS2TJ472	1/4W 4.7K		
R709	ERD10TJ470 or	47	1	
	ERDS2TJ470	1/4W 47		
R710	EVN38CA00B14	Variable 10K	1	
R711	ERD10TJ102 or	1K	1	
	ERDS2TJ102	1/4W 1K		
R712	ERD10TJ821	820	1	
	ERDS2TJ821	1/4W 820		
R713	ERD10TJ272 or	2.7K	1	
	ERDS2TJ272	1/4W 2.7K		
R714	ERD10TJ680 or	68	1	
	ERDS2TJ680	1/4W 68		
R715	ERD25TJ680	1/4W 68	1	
R716	ERD10TJ330 or	33	1	
	ERDS2TJ330	1/4W 33		
R717	ERD25TJ101	1/4W 100	1	
R718	ERD10TJ562 or	5.6K	1	
	ERDS2TJ562	1/4W 5.6K		
R719	ERD10TJ183 or	18K	1	
	ERDS2TJ183	1/4W 18K		
R720	ERD10TJ561 or	560	1	
	ERDS2TJ561	1/4W 560		
R721	ERD10TJ272 or	2.7K	1	
	ERDS2TJ272	1/4W 2.7K		
R722	ERD10TJ154 or	150K	1	
	ERDS2TJ154	1/4W 150K		
R723,724	ERD10TJ102 or	1K	2	
	ERDS2TJ102	1/4W 1K		
R725	ERD10TJ391 or	390	1	
	ERDS2TJ391	1/4W 390		
R726	ERD10TJ333 or	33K	1	
	ERDS2TJ333	1/4W 33K		
R727	ERD10TJ274 or	270K	1	
	ERDS2TJ274	1/4W 270K		
R728	ERD10TJ563 or	56K	1	
	ERDS2TJ563	1/4W 56K		
R729	ERD10TJ392 or	3.9K	1	
	ERDS2TJ392	1/4W 3.9K		
R730	ERD10TJ102 or	1K	1	
	ERDS2TJ102	1/4W 1K		
R731	ERD10TJ183 or	18K	1	
	ERDS2TJ183	1/4W 18K		
R732	ERD10TJ682 or	6.8K	1	
	ERDS2TJ682	1/4W 6.8K		
R733	EVN38CA00B23	Variable 2K	1	
R734	ERD10TJ332 or	3.3K	1	
	ERDS2TJ332	1/4W 3.3K		
R735	ERD10TJ124 or	120K	1	
	ERDS2TJ124	1/4W 120K		
R736	ERD10TJ221 or	220	1	
	ERDS2TJ221	1/4W 220		
R758,759	ERD10TJ472 or	4.7K	2	
	ERDS2TJ472	1/4W 4.7K		
R760	ERD10TJ103 or	10K	1	
	ERDS2TJ103	1/4W 10K		
R761	ERD10TJ682 or	6.8K	1	
	ERDS2TJ682	1/4W 6.8K		
R762	ERD10TJ152 or	1.5K	1	
	ERDS2TJ152	1/4W 1.5K		
R763	ERD10TJ683 or	68K	1	
	ERDS2TJ683	1/4W 68K		
R764	ERD10TJ222 or	2.2K	1	
	ERDS2TJ222	1/4W 2.2K		
R788	ERD10TJ154 or	150K	1	
	ERDS2TJ154	1/4W 150K		
R789	ERD25FJ100	1/4W 10	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Capacitors		
C703	ECCW1H820JR5	Ceramic 50V 82P	1	
		+ -5%		
C704	ECQMIH473KZ or	Polyester 50V 0.047	1	
	ECQMIH473KV			
C705	ECEA1CS471	Electrolytic 16V 470	1	
C708	ECEA1CS100	Electrolytic 16V 10	1	
C709	ECEA1HK010	Electrolytic 50V 1	1	
C710	ECCW1H220JC5	Ceramic 50V 22P	1	
		+ -5%		
C711	ECCW1H820JR5	Ceramic 50V 82P	1	
		+ -5%		
C712	ECEA1AS102	Electrolytic 10V 1000	1	
C713	ECEA1EW4R7S	Electrolytic 25V 4.7	1	
C715	ECCW1H050CC5	Ceramic 50V 5P	1	
		+ -0.25PF		
C716	ECKW1H391KB5	Ceramic 50V 390P	1	
C717	ECCW1H101KB5 or	Ceramic 50V 100P	1	
	ECCW1H101JP5	+ -5%		
C718	ECCW1H180JC5	Ceramic 50V 18P	1	
		+ -5%		
C719	ECCW1H270JC5	Ceramic 50V 27P	1	
		+ -5%		
C720	ECCW1H220JC5	Ceramic 50V 22P	1	
		+ -5%		
C721	ECCW1H020CC5	Ceramic 50V 2P	1	
		+ -0.25PF		
C722	ECSZ25EF1N	Tantalum 25V 1	1	
C723	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C724	ECCW1H820JR5	Ceramic 50V 82P	1	
		+ -5%		
C725	ECCW1H020CC5	Ceramic 50V 2P	1	
		+ -0.25PF		
C726	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C728	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C729	EQQV05104JZ	Polyester 50V 0.1	1	
		+ -5%		
C730-733	ECKW1H103ZF5	Ceramic 50V 0.01	4	
		+80% -20%		
C734	ECKW1H222ZF5	Ceramic 50V 0.0022	1	
		+80% -20%		
C736	ECQMIH103KZ or	Polyester 50V 0.01	1	
	ECQMIH103KV			
C737	ECEA1ES220	Electrolytic 25V 22	1	
C738	ECEA1ES4R7	Electrolytic 25V 4.7	1	
C739	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C745	ECEA1CS470	Electrolytic 16V 47	1	
C750	ECEA1CS100	Electrolytic 16V 10	1	
C751	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C752	ECCW1H560JC5	Ceramic 50V 56P	1	
		+ -5%		
C753	ECKW1H103ZF5	Ceramic 50V 0.01	1	
		+80% -20%		
C754	ECEA1HS010	Electrolytic 50V 1	1	
C755	ECEA1AS101	Electrolytic 10V 100	1	
C756	ECQMIH103KZ	Polyester 50V 0.01	1	
C759-761	ECKW1H103ZF5	Ceramic 50V 0.01	3	
		+80% -20%		
C762	ECEA1CN100S	Electrolytic 16V 10	1	
C763	ECEA1ES3R3	Electrolytic 25V 3.3	1	
C764	ECQMIH223KZ	Polyester 50V 0.022	1	
C767	ECKF1H103ZF	Ceramic 50V 0.01	1	
		+80% -20%		
C768	ECCW1H010CC5	Ceramic 50V 1P	1	
		+ -0.25PF		
C769	ECKF1H103ZF	Ceramic 50V 0.01	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		+80% -20%		
		Filters		
FL701	EFCS4R5MS3 or EFCS4R5MS4 or SFE4R5MB4	Ceramic Filter	1	
FL702	EFCS4R5MW3	Ceramic Filter	1	
FL703	EFCA4R5MC3A	Ceramic Filter	1	
		Coils		
L701	VLQS66F101K	100µH	1	
L702	VLQS66F680K	68µH	1	
L703	VLQS66F181K	180µH	1	
L704	VLQS66F120K	12µH	1	
L705	VLQS66F150K	15µH	1	
L706	VLQS66F2R2K	2.2µH	1	
L707	ELQSR56KB	0.56µH	1	
L708	VLQ80W680K	68µH	1	
L709	VLQS66F330K	33µH	1	
L710	VLQ80W620K	62µH	1	
L711	TLQ047K126	47µH	1	
		Pin Headers		
P701	VJPS1143	5P	1	
P702	VJPS1142	3P	1	
P703	VJPS1141	2P	1	
		Transformers		
T701	TL62313	I.F.T.	1	
T703	TLI67321	I.F.T.	1	
T704	TLI81312	I.F.T.	1	
T705	ETM3A423	I.F.T.	1	
T706	EUL-HLB202	I.F.T.	1	
		Miscellaneous		
	TJC6319	Fuse Holder	2	
	TJC6320	Fuse Holder	2	
	TMM7464	Clamper	1	
	VMZS0057	Power Shield Cover	1	
	VMZS0058	IF Shield Cover	1	
	VSCS0112	Heat Sink Plate	2	
	VSCS0117	Power Shield Case	1	
	VSCS0118	Power Shield Case	1	
	VSCS0119	Power Shield Case	1	
	VSCS0120	IF Shield Case	1	
	VSCS0121	IF Shield Case	1	
	VSCS0122	IF Shield Case	1	
		UHF/VHF TUNER POWER CONTROL C.B.A.		
		Transistors		
Q711-713	2SD637(Q,R,S)		3	
Q714	2SA684(Q,R,S)		1	
Q715,716	2SB642(Q,R,S)		2	
Q717	2SD637(Q,R,S)		1	
Q718,719	2SB642(Q,R,S)		2	
Q720	2SD637(Q,R,S)		1	
Q721	2SD637(C,R)		1	
Q723	2SD637(Q,R,S)		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Diodes		
D704	MA161C		1	
D710	RD5.6JB2	Zener	1	
D711	µPC574J	Zener	1	
D712,713	MA165		2	
		Resistors		
R755	ERD10TJ472 or ERDS2TJ472	4.7K 1/4W 4.7K	1	
R756	ERD10TJ273 or ERDS2TJ273	27K 1/4W 27K	1	
R757	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R766-769	ERD10TJ223 or ERDS2TJ223	22K 1/4W 22K	4	
R770	ERD50TJ682	1/2W 6.8K	1	
R771	ERD25FJ561	1/4W 560	1	
R772,773	ERD10TJ222 or ERDS2TJ222	2.2K 1/4W 2.2K	2	
R774	ERD10TJ223 or ERDS2TJ223	22K 1/4W 22K	1	
R775	ERD10TJ823 or ERDS2TJ823	82K 1/4W 82K	1	
R776,777	ERD10TJ223 or ERDS2TJ223	22K 1/4W 22K	2	
R779	ERD10TJ223 or ERDS2TJ223	22K 1/4W 22K	1	
R780	ERD10TJ222 or ERDS2TJ222	2.2K 1/4W 2.2K	1	
R781	ERD10TJ104 or ERDS2TJ104	100K 1/4W 100K	1	
R782	ERD10TJ393 or ERDS2TJ393	39K 1/4W 39K	1	
R783	ERD10TJ823 or ERDS2TJ823	82K 1/4W 82K	1	
R784	ERD10TJ105 or ERDS2TJ105	1M 1/4W 1M	1	
R785	ERD10TJ474 or ERDS2TJ474	470K 1/4W 470K	1	
R786	ERD10TJ154 or ERDS2TJ154	150K 1/4W 150K	1	
R787	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
		Capacitors		
C758	ECEA1HS010	Electrolytic 50V	1	1
C765	ECQM1H223KV or ECQM1H223KZ	Polyester 50V	0.022	1
C766	ECEA1CS220	Electrolytic 16V	22	1
		Pin Headers		
P704	VJPS1141	2P	1	
P705	VJPS1146	10P	1	
P707	VJPS1143	5P	1	
P708	VJPS1145	8P	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		CHANNEL SELECTION & POTENTIOMETER C.B.A.		
		Integrated Circuit		
IC7301	AN5010		1	
		Transistors		
Q7301	2SD637 (Q,R)		1	
Q7302	2SB642 (Q,R)		1	
		Diodes		
D7301-7314	MA161C		14	
D7317-7330	MA161C		14	
D7331,7332	MA165 or 1SS119		2	
D7333	MA161C		1	
		Resistors		
R7301	ERD25TJ122	1/4W 1.2K	1	
R7302	ERD10TJ102 or ERDS2TJ102	1K 1/4W 1K	1	
R7303	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R7304	ERD10TJ393 or ERDS2TJ393	39K 1/4W 39K	1	
R7305	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R7307	ERD10TJ223 or ERDS2TJ223	22K 1/4W 22K	1	
R7308-7321	EWEM2A401B24	Variable 20K	14	
R7324,7325	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	2	
R7326	ERD10TJ562 or ERDS2TJ562	5.6K 1/4W 5.6K	1	
R7328	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
		Capacitors		
C7302,7303	ECQM1H182KV or ECQM1H182KZ	Polyester 50V 0.0018	2	
C7304	ECBA1A5470	Electrolytic 10V 47	1	
		Pin Headers		
P7301	VJPS1151	6P	1	
P7302	VJPS1153	10P	1	
		Switches		
SW7301-7314	EVQ-REAR05	UHF/VHF Band Select Switch	14	
SW7317	ESB655	AFT Switch	1	
SW7318	VSSS0004	Wireless Remote Switch	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		PROGRAMMABLE TIMER C.B.A.		
		Integrated Circuits		
IC7601	MN1455BVA		1	
IC7602	uPD1511C055		1	
		Transistors		
Q7601-7604	2SD636 (Q,R)		4	
Q7605-7607	2SB642 (Q,R)		3	
Q7608	2SB641 (Q,R)		1	
Q7609	2SD636 (Q,R)		1	
Q7610	2SB641 (Q,R)		1	
Q7611	2SB642 (Q,R)		1	
Q7612,7613	2SD636 (Q,R)		2	
Q7614	2SB641 (Q,R)		1	
Q7615	2SB642 (Q,R)		1	
Q7616-7620	2SD636 (Q,R)		5	
Q7621	2SB641 (Q,R)		1	
		Diodes		
D7601-7605	MA165 or 1SS119		5	
D7608	MA165 or 1SS119		1	
D7609	EM1Z or ERB12-01		1	
D7610	LN28WP	L.E.D.	1	
D7611	MA522		1	
D7612	EM1Z or ERB12-01		1	
D7613-7621	MA165 or 1SS119		9	
D7623	MA165 or 1SS119		1	
D7624	RD8.2JB	Zener	1	
D7625,7626	MA165 or 1SS119		2	
		Resistors		
RK7601	EXBP85473K	Complex Compo. 47K	1	
R7601	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R7602	ERD10TJ562 or ERDS2TJ562	5.6K 1/4W 5.6K	1	
R7603-7607	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	5	
R7608	ERD10TJ562 or ERDS2TJ562	5.6K 1/4W 5.6K	1	
R7609,7610	ERD10TJ104 or ERDS2TJ104	100K 1/4W 100K	2	
R7611	ERD10TJ103 or ERDS2TJ103	10K 1/4W 10K	1	
R7612	ERD10TJ473 or ERDS2TJ473	47K 1/4W 47K	1	
R7613	ERD10TJ562 or ERDS2TJ562	5.6K 1/4W 5.6K	1	
R7614	ERD10TJ333 or ERDS2TJ333	33K 1/4W 33K	1	
R7615,7616	ERD10TJ104 or ERDS2TJ104	100K 1/4W 100K	2	
R7617	ERD10TJ153 or ERDS2TJ153	15K 1/4W 15K	1	

Service Manual

Programmable Tuner/Timer Unit

Vol. 7

Panasonic **VHS**
Omnivision

PV-A500

**Programmable Timer/Tuner Unit &
Wireless Remote Control**



SPECIFICATIONS

Power Source:	120 VAC $\pm 10\%$, 60 Hz $\pm 0.5\%$
Power Consumption:	Approx. 36 W DC out 12 V 1.2 A
Television System:	EIA Standard (525 lines, 60 field)
Timer:	2 weeks/4 programs programmable timer
Input:	VHF Ch2-Ch13, Cable channels "A"—"W" 75 Ω unbalanced UHF Ch14-Ch83, 300 Ω balanced RF (Ch3 or Ch4)
Output:	Video: (Multi connector) 1.0 Vp-p, 75 Ω unbalanced Audio: (Multi connector) -6 dB, 600 Ω unbalanced
Operating Temperature:	32°F ~ 104°F (0°C ~ 40°C)
Operating Humidity:	10% ~ 75%
Weight:	8.2 lbs (3.7 kg)
Dimensions:	9-3/8"(W) $\times$ 3-5/8"(H) $\times$ 9-3/4"(D) 238(W) $\times$ 92.5(H) $\times$ 245(D) mm

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedure which may be required for electronic circuits of ELECTRONIC PROGRAMMABLE TIMER/TUNER UNIT.

1. Test Equipments

To perform the electrical adjustments completely, the following equipments are required.

1. DVM (Digital Volt Meter)
Voltage Range: 0.01 - 50V
2. Frequency Counter
Frequency Range: 0 - 10MHz
3. DC Voltage Supply (0 - 20V)
4. Dual-Trace Oscilloscope
Voltage Range: 0.05 - 50V/Div.
Frequency Range: DC - 10MHz
Probes: 10:1, 1:1
5. TV Channel Signal Generator
6. DC Amperemeter
Current Range: 0 - 10A
7. VIF Sweep & Trap Generator
8. Spectrum Analyzer
9. Color TV Receiver or Monitor
10. Attenuator (-0dB - -50dB)
11. Monitor Scope
12. Non-metallic Screwdriver (Using TV Demodulator Section) and Plastic Tip Driver.

2. Adjustment Procedures

These adjustment procedures are for the following three sections:

1. Power Supply Section
2. TV Demodulator Section
3. Programmable Timer Section

2-1. Power Supply Section

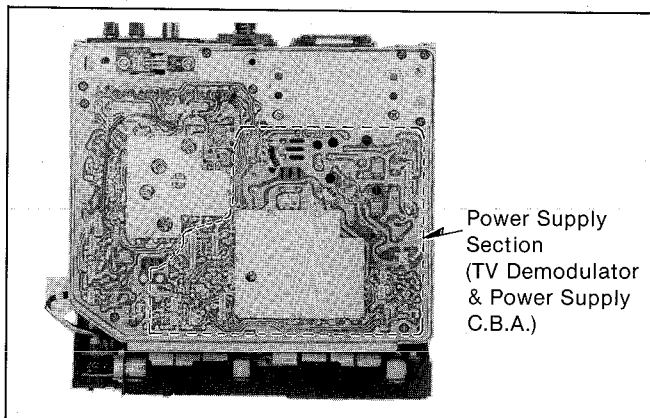


Fig. E1

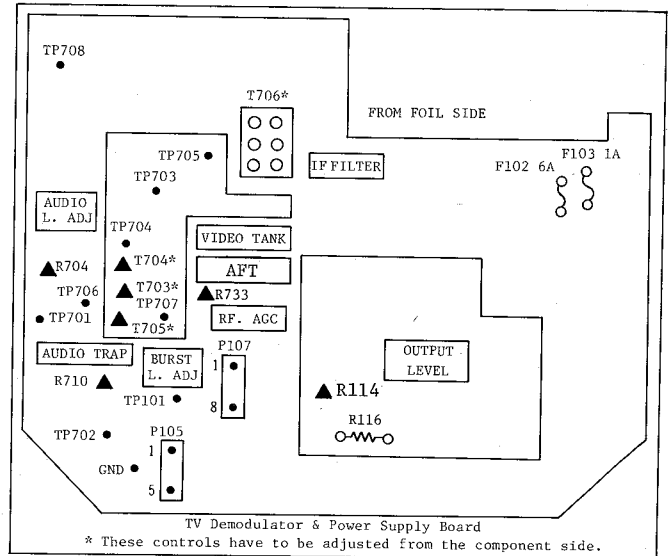


Fig. E2

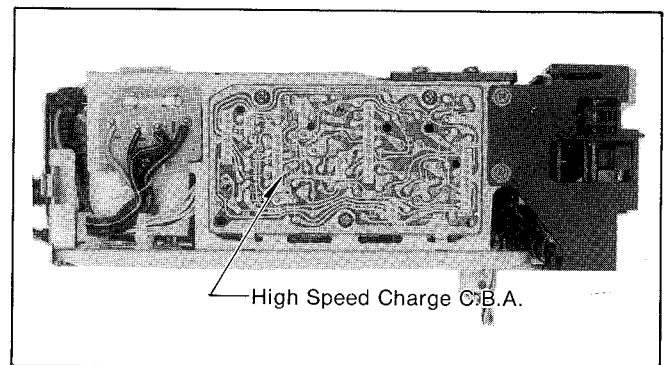


Fig. E3

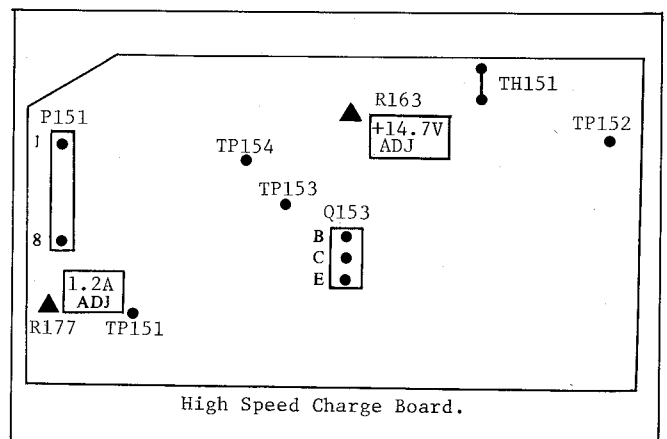


Fig. E4

2-1-1. Charge Voltage (+14.7V) Adjustment

Test Point: TP101

Adjustment: R163 (+14.7V)

1. Don't connect the Multi-connector and check the AC input voltage for 120V AC.
2. Connect a 30-50k Ω resistor in parallel with R116 in the Power Supply Section.

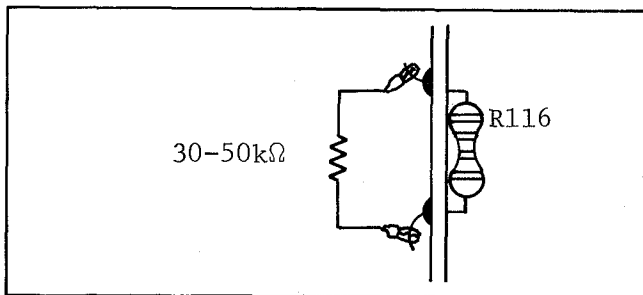


Fig. E5

3. Unsolder the thermistor (TH151) and connect a 3.3k Ω resistor to the thermistor connection points on the High Speed Charge Board.
4. Connect a jumper wire between the base and the emitter of Q153.

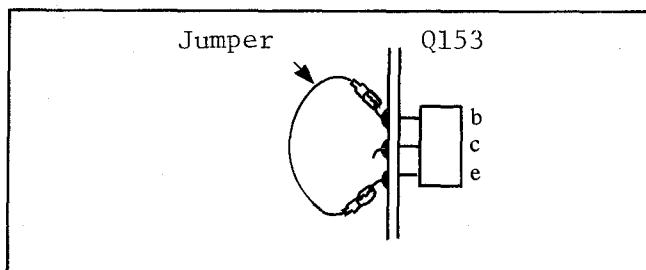


Fig. E6

5. Turn the tuner power switch "ON".
6. Connect the DVM to TP101 in the Power Supply Section.
7. Connect the scope to TP153 on the High Speed Charge Board.
8. Turn the +14.7V (R163) counter-clockwise from the component side.
9. Adjust the OUTPUT LEVEL (R114) so that the voltage at TP101 is 15.7 V, $\pm 0.03V$.
10. Slowly turn the +14.7V (R163) clockwise until the voltage at TP153 starts to drop.
11. Adjust the OUTPUT LEVEL (R114) so that the voltage at TP101 is 15.60 V, $\pm 0.03V$.
12. Turn the tuner power switch off, then back on again.

13. Confirm that the voltage at TP153 is High.
14. Confirm that the voltage at TP153 is Low when the voltage at TP101 is 15.60V, $\pm 0.03V$.

2-1-2. +13V DC Adjustment

Test Point: P101

Adjustment: R114 (OUTPUT LEVEL)

1. Do not connect the Multi-Connector to the deck.
2. Confirm that the AC input voltage is 120V AC.
3. Connect the DVM to TP101 in the Power Supply Section.
4. Adjust the OUTPUT LEVEL (R114) so that the voltage is 13.0V DC, $\pm 0.2V$ DC.

2-1-3. Charge Current (1.2A) Adjustment

Test Point: P107-Pins 1 and 2.

Adjustment: R163 (1.2A)

1. Do not connect the Multi-Connector to the deck.
2. Confirm that the AC input voltage is 120V AC.
3. Connect the DC Amperemeter and a battery as shown below.

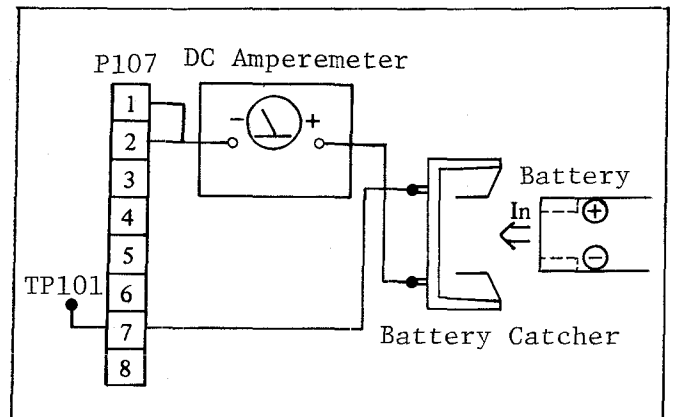


Fig. E7

The output voltage of the battery should be about 10.25V DC. It can be made as following process.

- (1) Discharge the battery by using the VCR which has to be already adjusted the Under Cut Adjustment.
- (2) The VCR automatically turns into the STOP mode, because the Under Cut function works.
- (3) At this time the output voltage of the battery is approximately 10.3V DC.

4. Connect the scope to TP153 on the High Speed Charge Board.
5. Confirm that the voltage at TP153 is High (15V - 16V).
6. Adjust the 1.2A (R163) so that the current is 1.0A, $\pm 0.05A$.

2-2. TV Demodulator Section

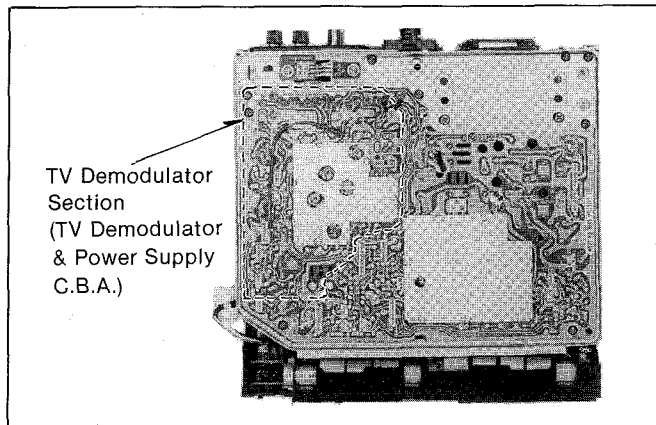


Fig. E8

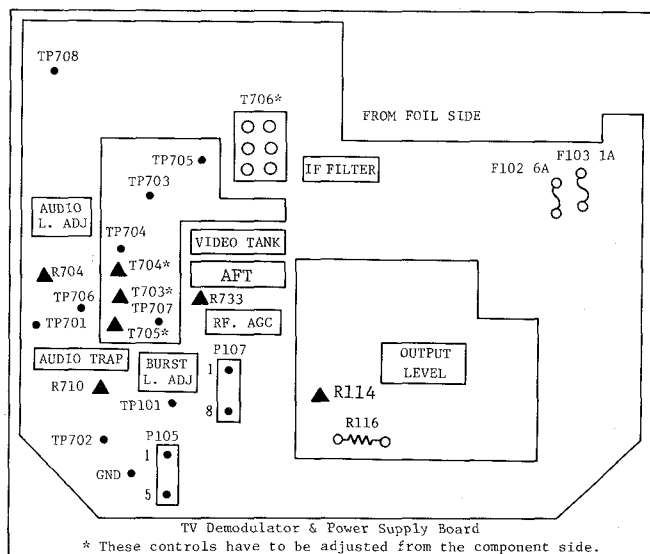


Fig. E9

2-2-1. 45.75MHz Tuning Coil Adjustment

Test Point: TP706

Adjustments: T703 (AFT)

T704 (VIDEO TANK)

1. Connect the VIF Sweep Generator, Trap Adjuster and Monitor Scope are as shown below.

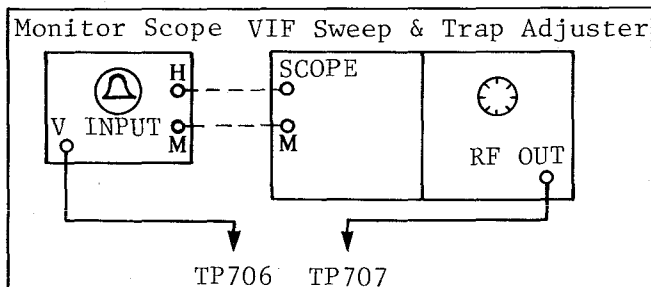


Fig. E10

2. Connect the output of the VIF Sweep Generator to TP707 on the TV Demodulator Section.
3. Connect the V Input of the scope to TP706 on the same section.
4. Connect the DC Voltage Regulator to TP705 on the same section.
5. Adjust the sweep output so that the level of sweep waveform is 0.1Vp-p.

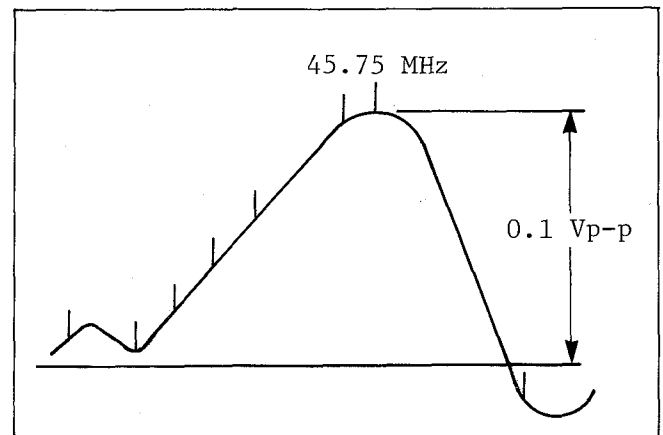


Fig. E11

6. Remove the core of T703.
7. Adjust the VIDEO TANK (T704) so that the marker portion of 45.75 MHz becomes maximum as shown below.
8. After VIDEO TANK (T704) adjustment, adjust AFT (T703) so that the marker portion of the marker 45.75 MHz portion is as shown below.

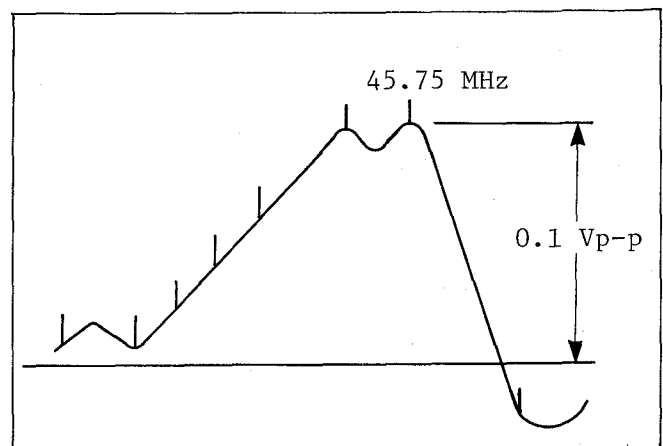


Fig. E12

2-2-2. VIF Overall Adjustment

Test Point: TP706

Adjustments: T705 (AUDIO TRAP)
T706 (IF FILTER)

1. Connect the VIF Sweep, Trap Adjuster and Monitor scope are as shown below.

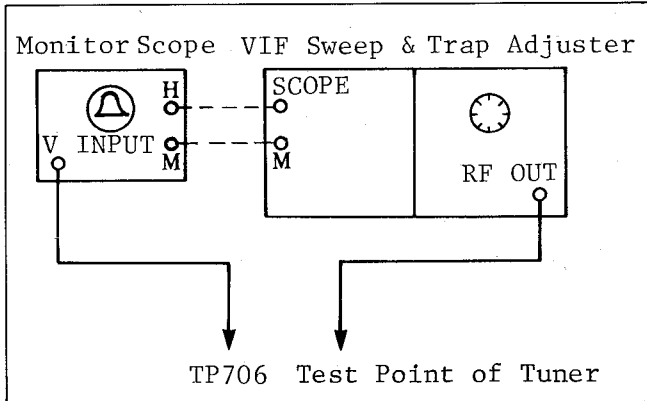


Fig. E13

2. Connect the output of the VIF Sweep Generator to tuner test point.
3. Connect the V Input of the Monitor scope to TP706 on the TV Demodulator Section.
4. Connect a jumper between TP703 and TP704 through a resistor 100Ω.
5. Connect a jumper between TP709 and GND.
6. Connect the DC Voltage Regulator to TP705, and set the voltage so that the V portion becomes maximum.
7. Adjust the output of the VIF Sweep Generator so that the V level is 1.0Vp-p.

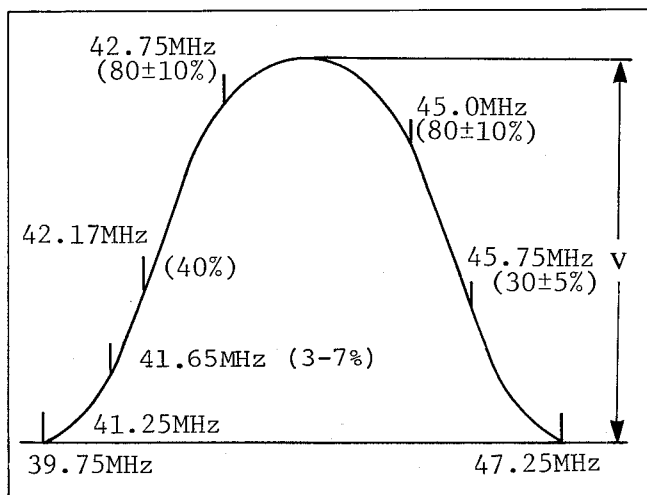


Fig. E14

8. Release 25dB from the attenuator of the VIF Sweep Generator.
9. Adjust the DC Voltage Regulator so that the V portion becomes 1.0Vp-p.
10. Set the Trap Keying Switch (41.25 MHz) on the VIF Sweep Generator.
11. Adjust the AUDIO TRAP (T705) so that the attenuation of the 41.25 MHz trap becomes minimum.

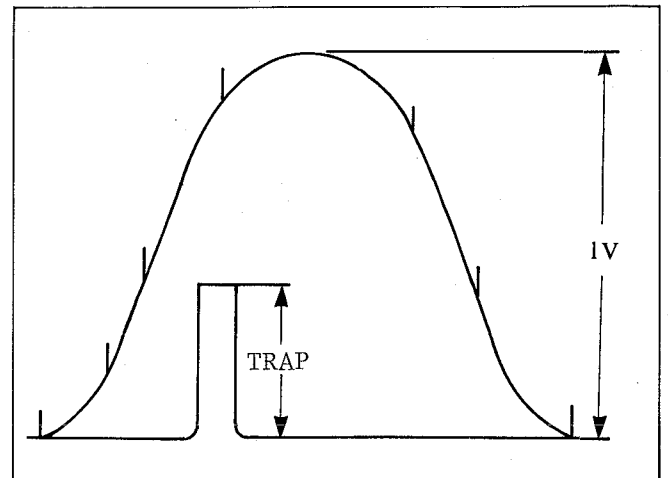


Fig. E15

12. Set the Trap Keying Switch (47.25 MHz) on the VIF Sweep Generator.
13. Adjust the IF FILTER (T706) (1) so that the attenuation of the 47.25MHz trap becomes minimum.

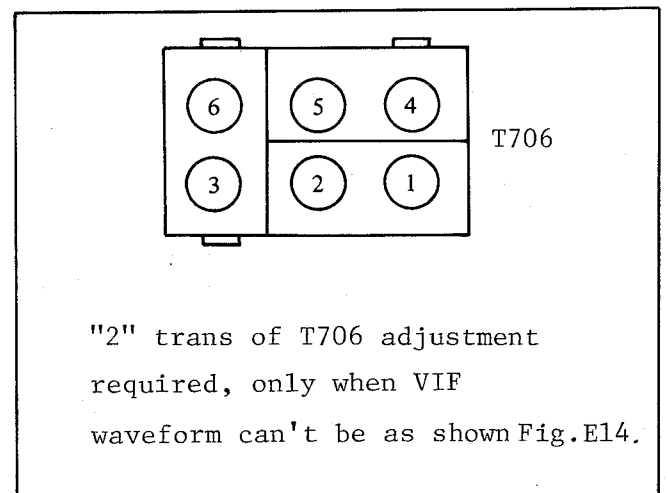


Fig. E16

14. set the Trap Keying Switch (39.75 MHz) on the VIF Sweep Generator.
15. Adjust the IF FILTER (T706) (2) so that the attenuation of the 39.75MHz trap becomes minimum.

16. Adjust the tuner converter trans on the VHF tuner and (3), (4), (5) and (6) trans of T706 so that the sweep output waveform becomes as shown Fig.E14.

2-2-3. AFT Trans Adjustment

Test Point: Test Point of Tuner
Adjustment: T703 (AFT)

1. Tune in a local on-air TV program.
(Using Channel 4)
2. Connect the frequency counter to tuner test point. (On the UHF/VHF Tuner)
3. Set the AFT switch on the preset panel is "OFF".
4. Adjust the tuning control so that the frequency is $113.0 \pm 0.1\text{MHz}$.
5. Set the AFT switch on the preset panel is "ON".
6. Adjust the AFT (T703) so that the level at the tuner test point becomes $113.0 \pm 0.05\text{MHz}$.

2-2-4. Burst Level Adjustment

Test Point: TP702

Adjustment: R710 (VIDEO LEVEL)

1. Supply the NTSC standard color bar signal to RF In terminal and tune this signal.
2. Connect the scope to TP702.
3. Confirm that the video level at TP702 is $1.0 \pm 0.2\text{Vp-p}$.
4. Adjust the VIDEO LEVEL (R710) so that the burst level becomes $22\% \pm 1\%$ of video level.

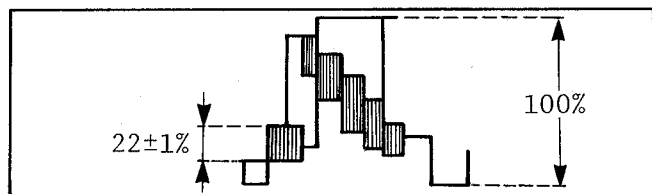


Fig. E17

2-2-5. SIF Input Trans (4.5MHz TRAP)

Adjustment.

Test Point: TP708

Adjustment: T701 (4.5MHz TRAP)

1. Tune in a local on-air TV program.
(Using free channel)
2. Connect the scope to TP708 on the TV Demodulator section. (Using Field Effect Transistor Probes)

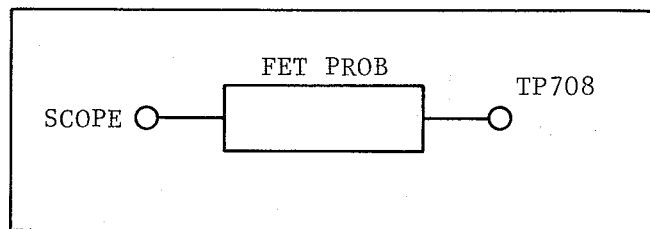


Fig. E18

3. Adjust the 4.5MHz TRAP (T701) so that the level becomes maximum.

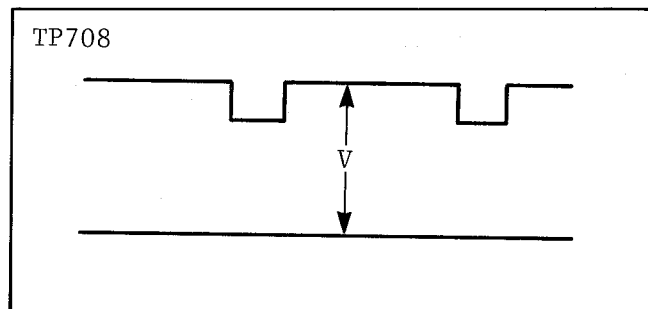


Fig. E19

2-2-6. Audio Level Adjustment

Test Point: TP701

Adjustment: R704 (AUDIO LEVEL)

1. Supply a audio signal of 400Hz with 30% modulated frequency to the RF input on the rear panel.
(Using the TV Channel Signal Generator)
2. Connect the scope between TP701 and GND.
3. Adjust the AUDIO LEVEL (R704) so that the level is $133 \pm 20 \text{ mVp-p}$.

2-2-7. RF AGC Adjustment

Test Point: TP709

Adjustment: R733 (RF AGC)

1. Tune in a color bar signal (VHF).
2. Set the AFT switch to "ON" position.
3. Set the input level of electric field to $65 \pm 2\text{dB}$. (Using the Attenuator and Spectrum Analyzer)
4. Connect the scope to TP709 on the TV Demodulator Section.
5. Tune the RF AGC (R733) fully counterclockwise from component side.
6. Then slowly turn the RF AGC (R733) till just before the voltage drops.
7. Change the input electric field from 65dB to 68dB.
8. Confirm that the voltage at TP709 is dropped more than 1.0V.

2-3. Programmable Timer Section

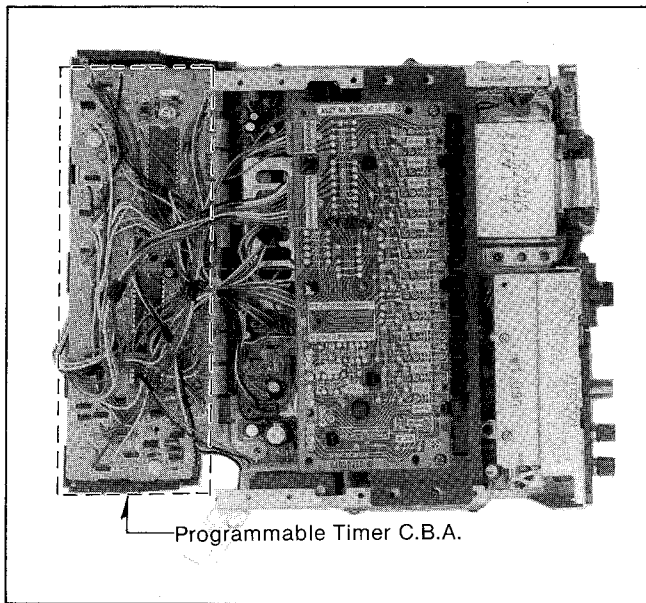


Fig. E20

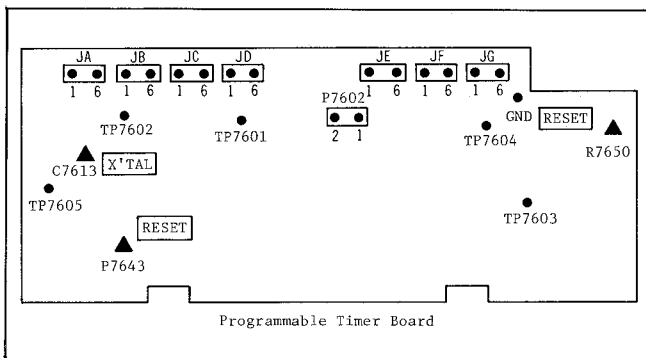


Fig. E21

2-3-1. Reset Voltage (TIMER CPU) Adjustment

Test Point: TP7601

Adjustment: R7643 (RESET)

1. Disconnect the AC plug from the AC outlet.
2. Disconnect the connectors (P105 and P7602) from Power Supply Section and timer board.
3. Connect the DC Voltage Regulator to P7602 on the Timer board.

P7602 DC Power Supply

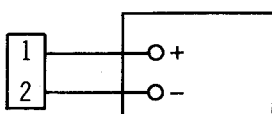


Fig. E22

4. Connect the DVM to TP7605 on the same board.
5. Adjust the DC Voltage Regulator so that the voltage on TP7605 is $4.0 \pm 0.05V$ DC.
6. Connect the DVM to TP7601 on the timer board.
7. Turn the RESET (R7643) fully clockwise from the component side.
8. Then, slowly adjust the RESET (R7643) counterclockwise from the component side and set the point at which the voltage is suddenly increased.
9. Then, set the voltage of DC Voltage Regulator to $3.8 \pm 0.05V$ and confirm that the reset action does operate.

2-3-2. Reset Voltage (SERIAL DECODER) Adjustment

Test Point: TP7603

Adjustment: R7650 (RESET)

1. Disconnect the AC plug from AC outlet.
2. Disconnect the connectors (P105 and P7602) from Power Supply Section and timer board.
3. Connect the DC Voltage Regulator to TP7606 and set the voltage to $4.5 \pm 0.05V$ DC.
4. Connect the DVM to TP7603 on the same board.
5. Turn the RESET (R7650) center position.
6. Then, slowly adjust the RESET (R7650) C.W. or C.C.W. and set the point which the voltage at TP7603 is suddenly increased.
7. Then, set the voltage of the DC Voltage Regulator to $4.2 \pm 0.05V$ and confirm that the reset action does operate.

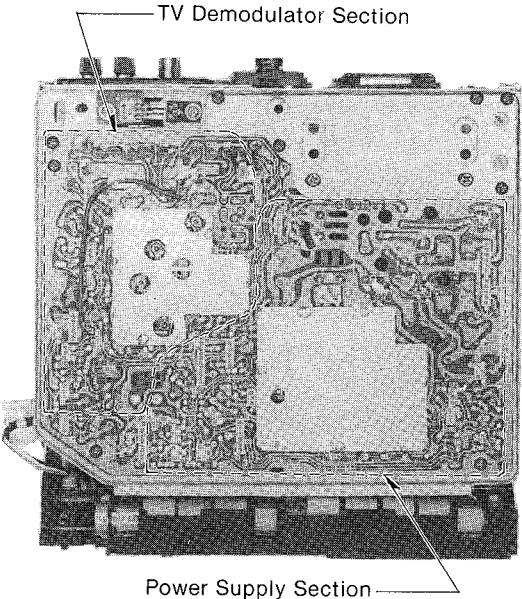
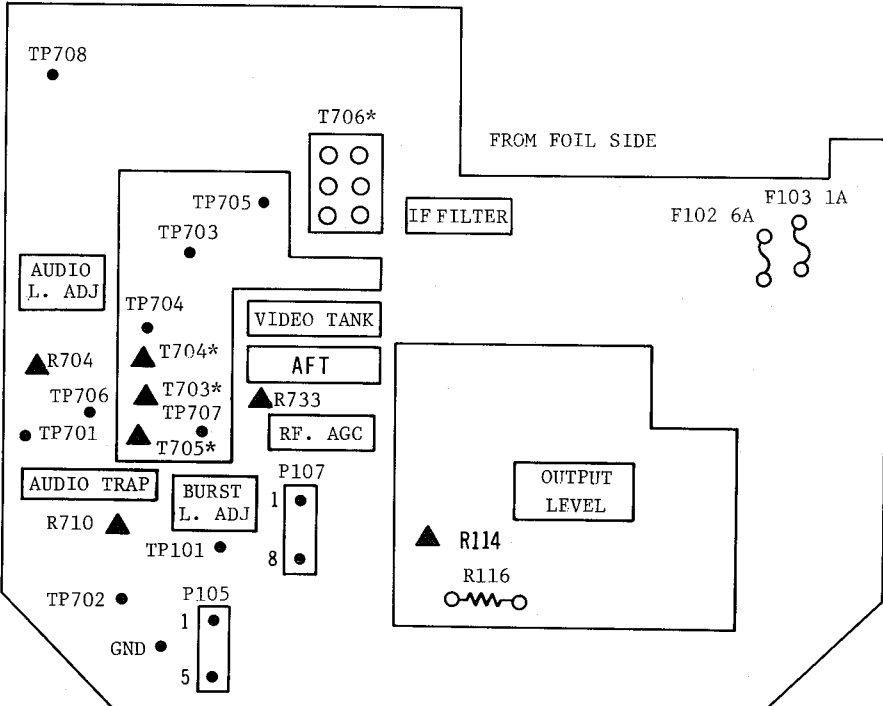
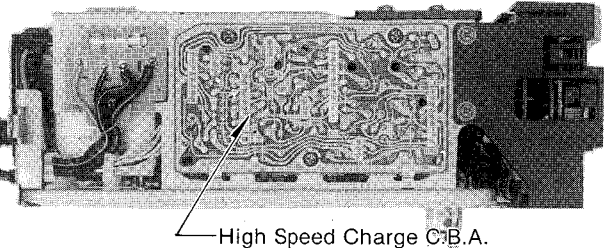
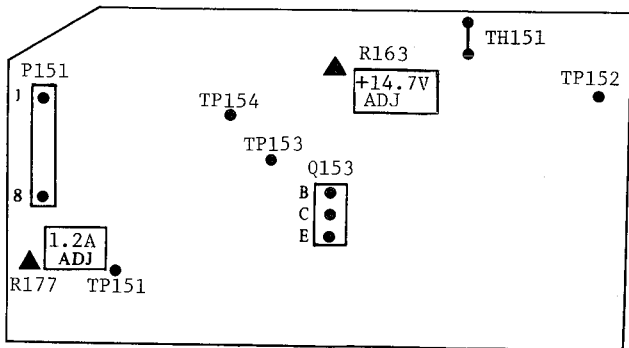
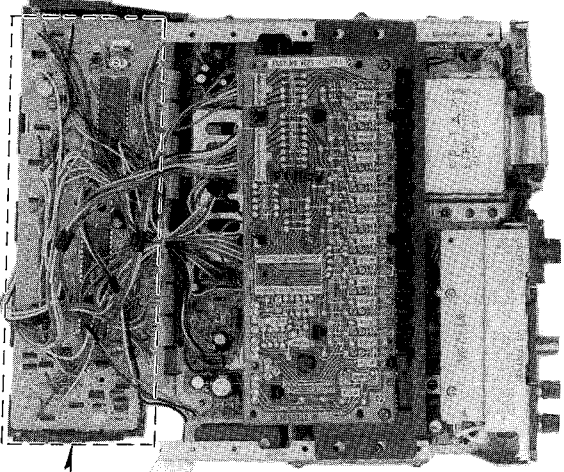
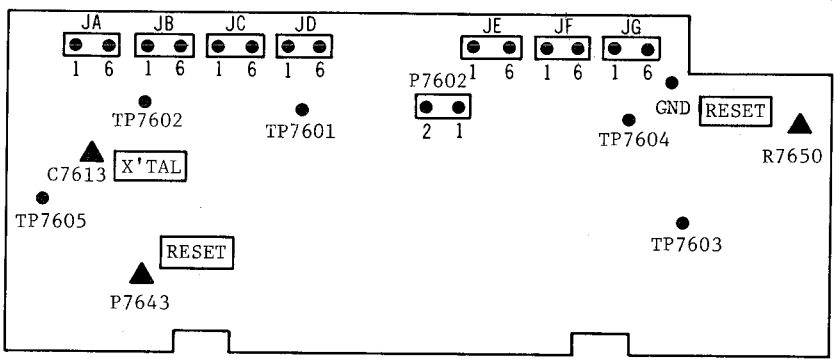
2-3-3. X'tal OSC (4.19MHz) Adjustment

Test Point: TP7602

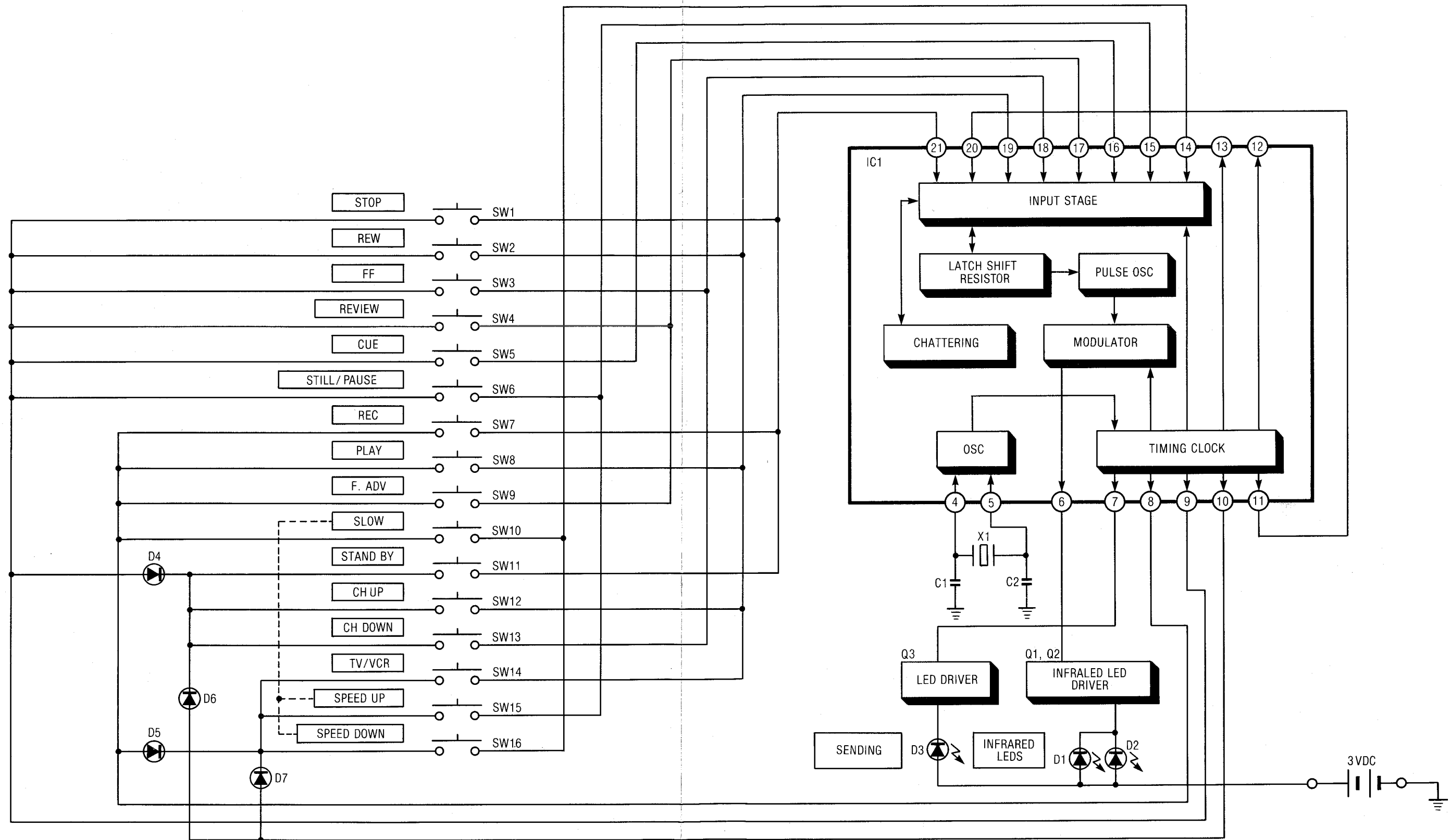
Adjustment: C7613 (X'TAL)

1. Connect the AC plug from the AC outlet.
2. Connect the frequency counter to TP7602 on the timer board.
3. Adjust the X'tal (C7613) so that the frequency is $128 \pm 0.001Hz$.

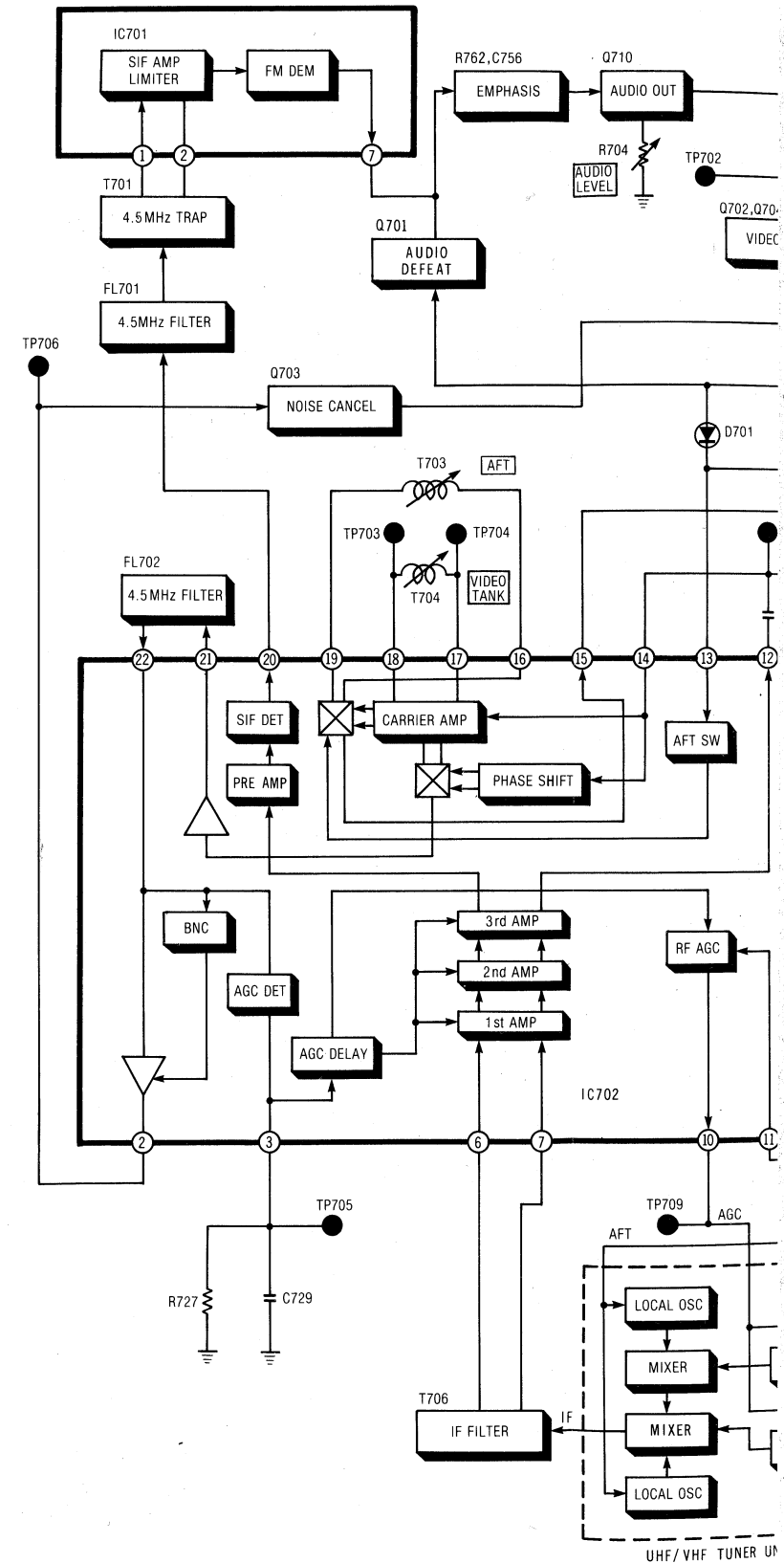
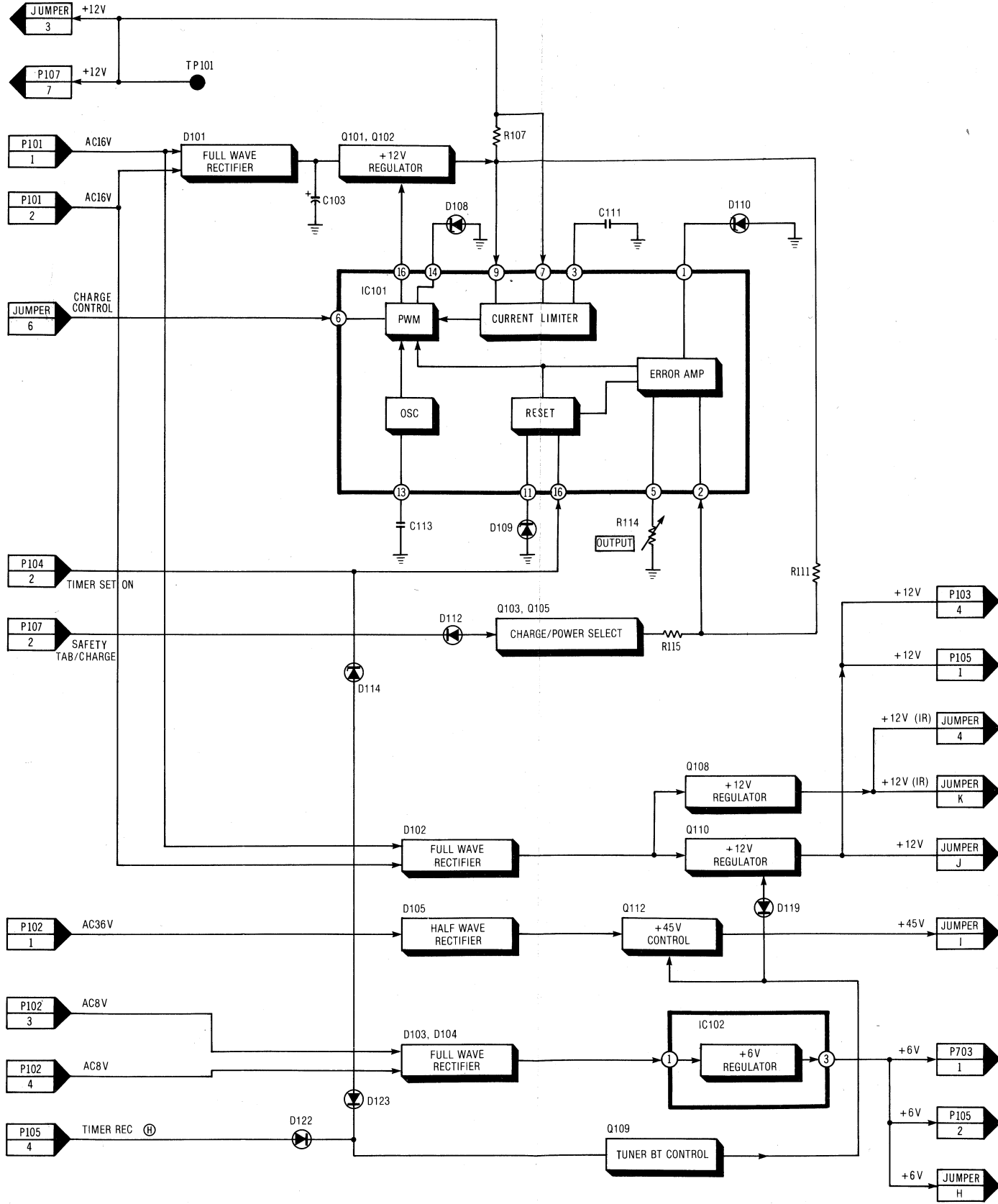
Location of Test Points and Controls

TV Demodulator & Power Supply C.B.A. (VEPS0735A1)	High Speed Charge C.B.A. (VEPS0123A)	Programmable Timer C.B.A. (VEPS0736A1)
TV Demodulator Section  Power Supply Section  TV Demodulator & Power Supply Board * These controls have to be adjusted from the component side.	 High Speed Charge C.B.A.  High Speed Charge Board.	 Programmable Timer C.B.A.  Programmable Timer Board

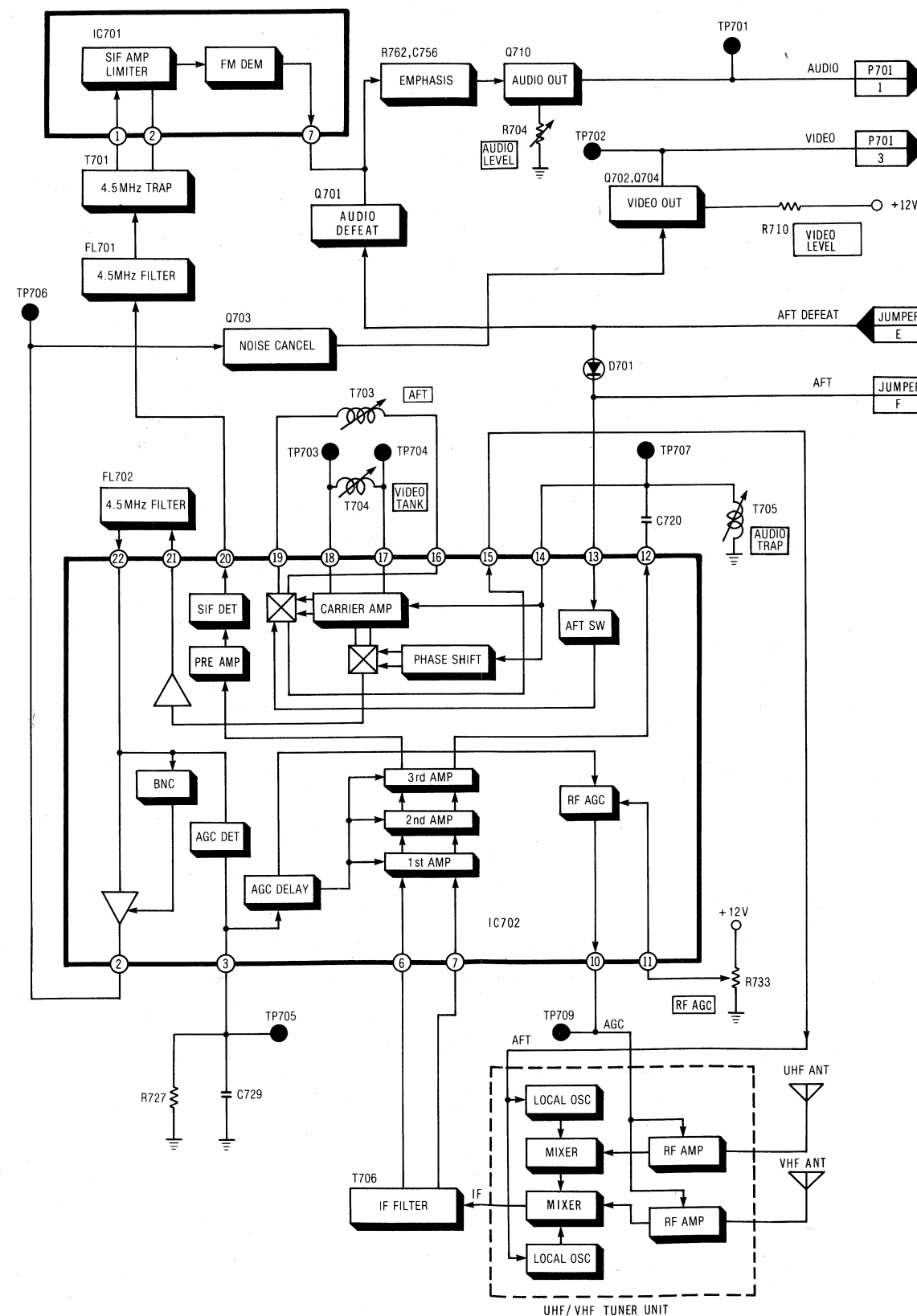
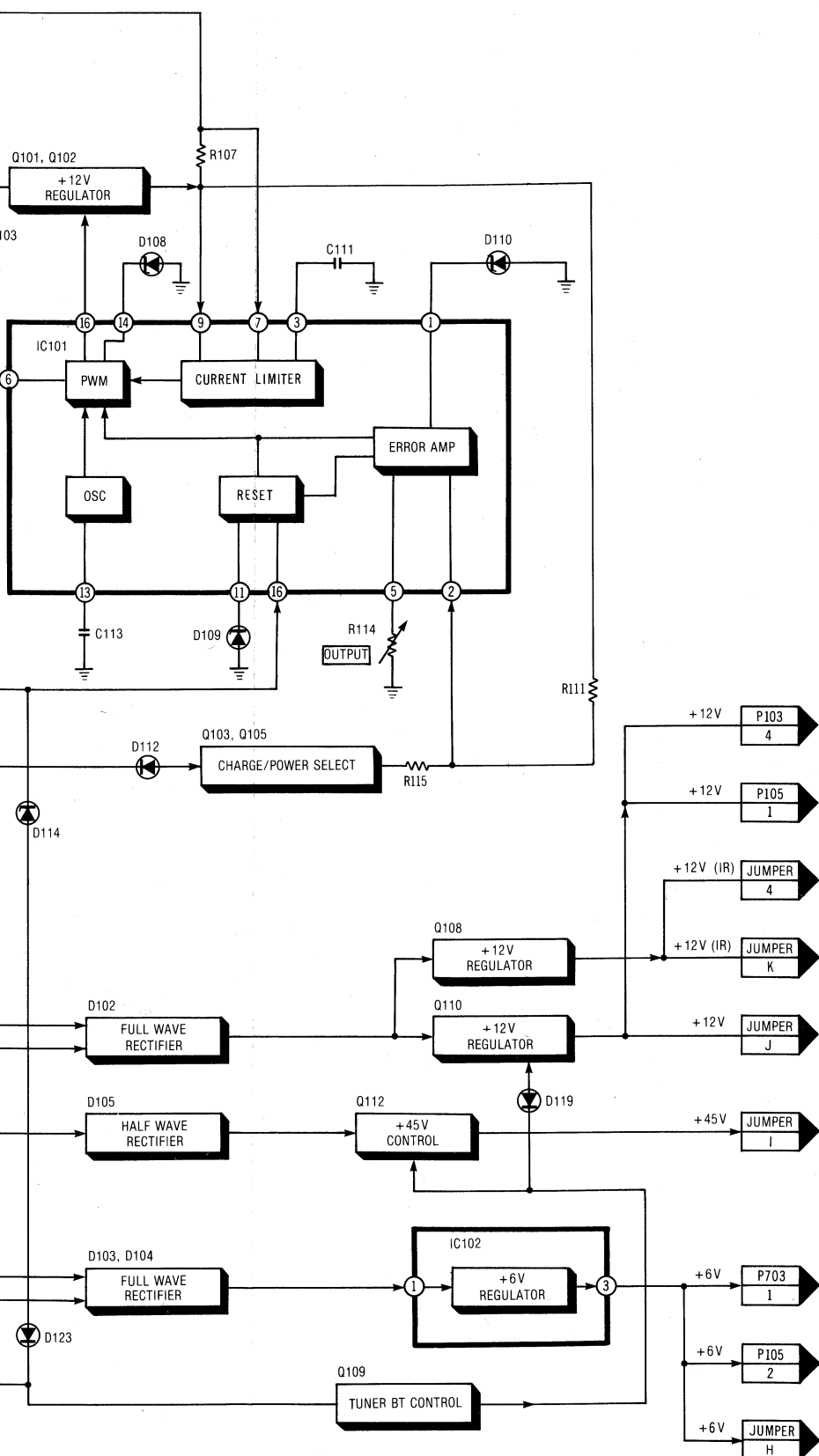
IR WIRELESS TS/RANSITTER BLOCK DIAGRAM



TV DEMODULATOR & POWER SUPPLY BLOCK DIAGRAM

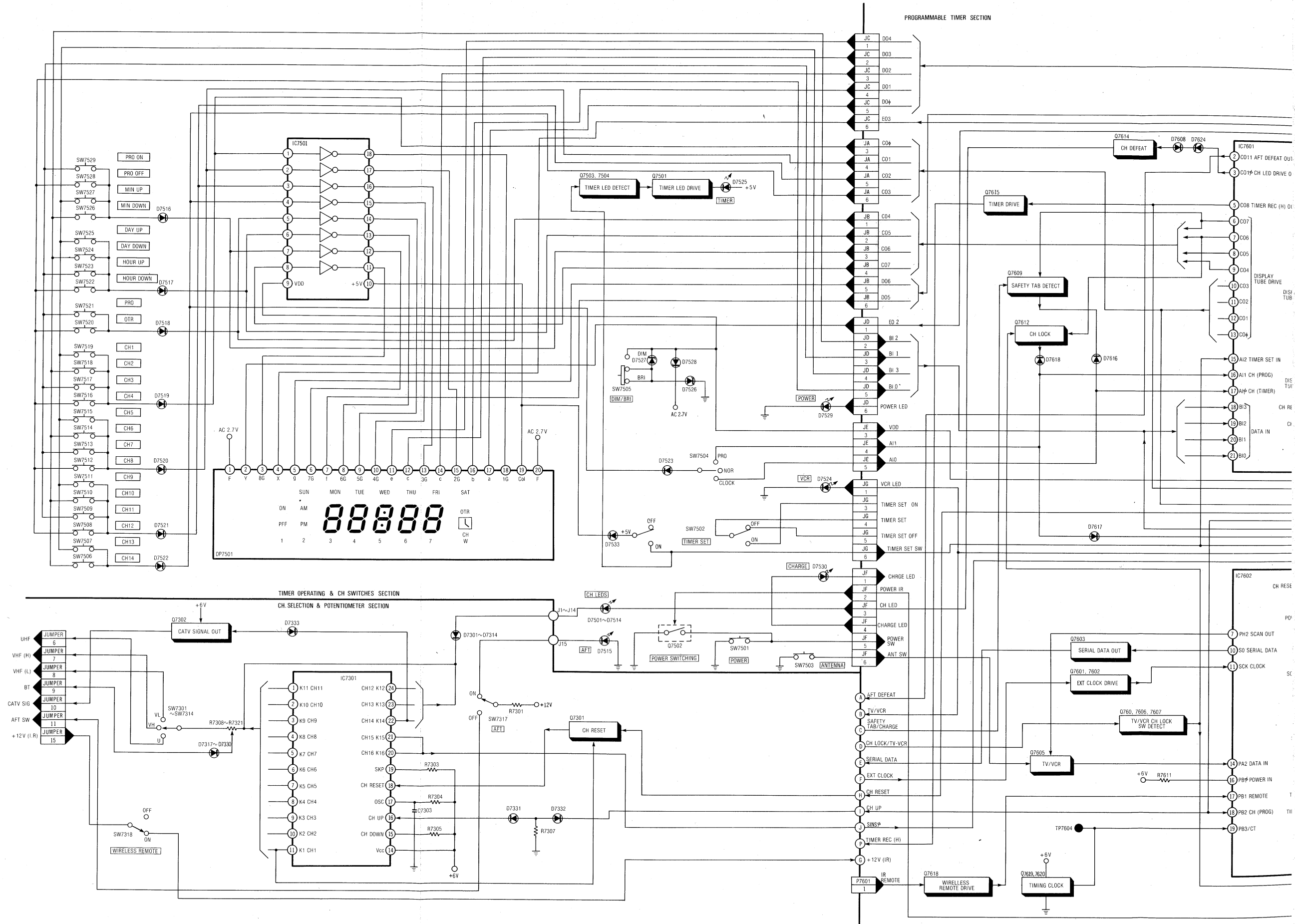


7-9 TV DEMODULATOR & POWER SUPPLY BLOCK DIAGRAM

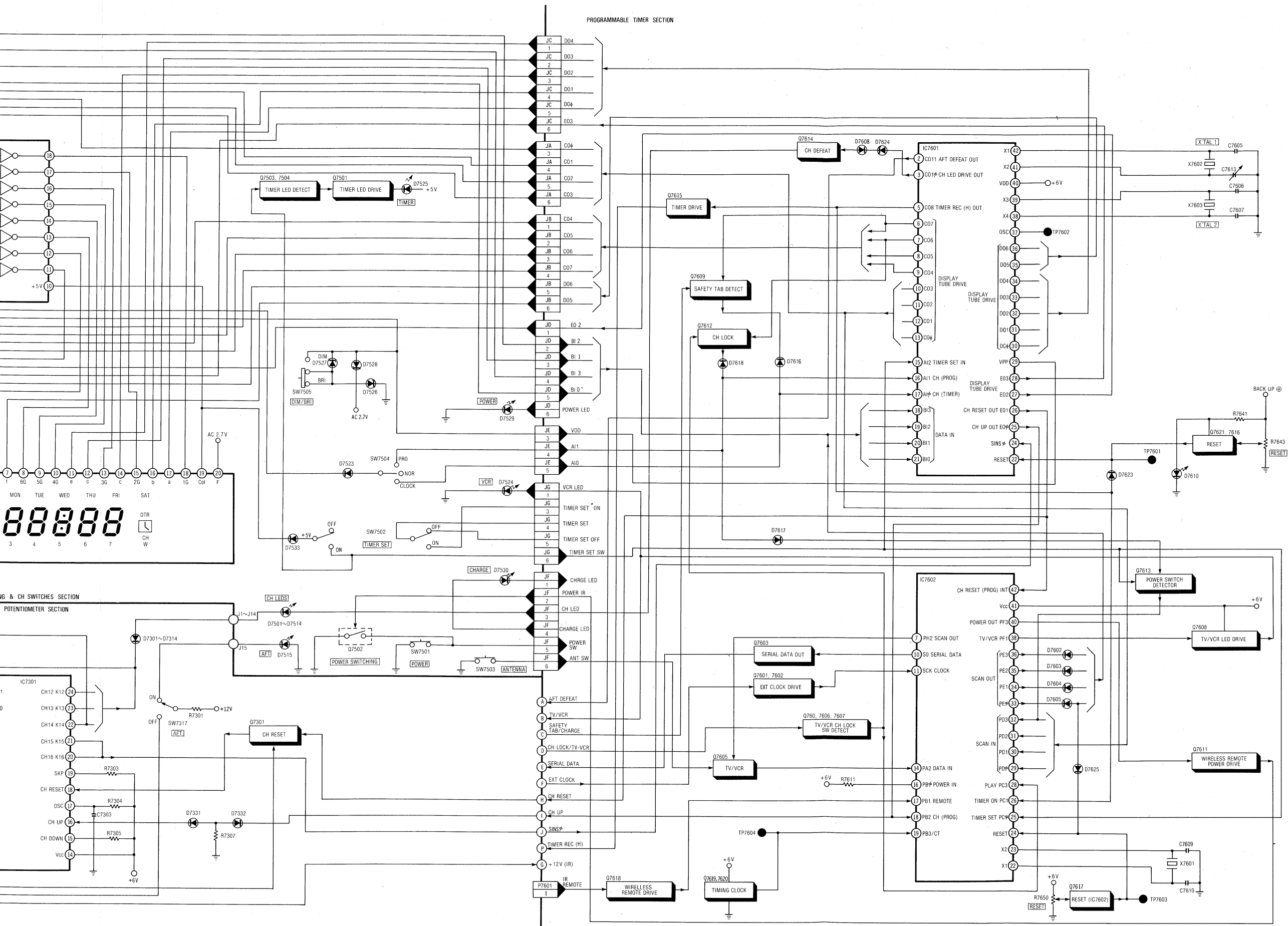


7-10 PROGRAMMABLE TIMER BLOCK DIAGRAM

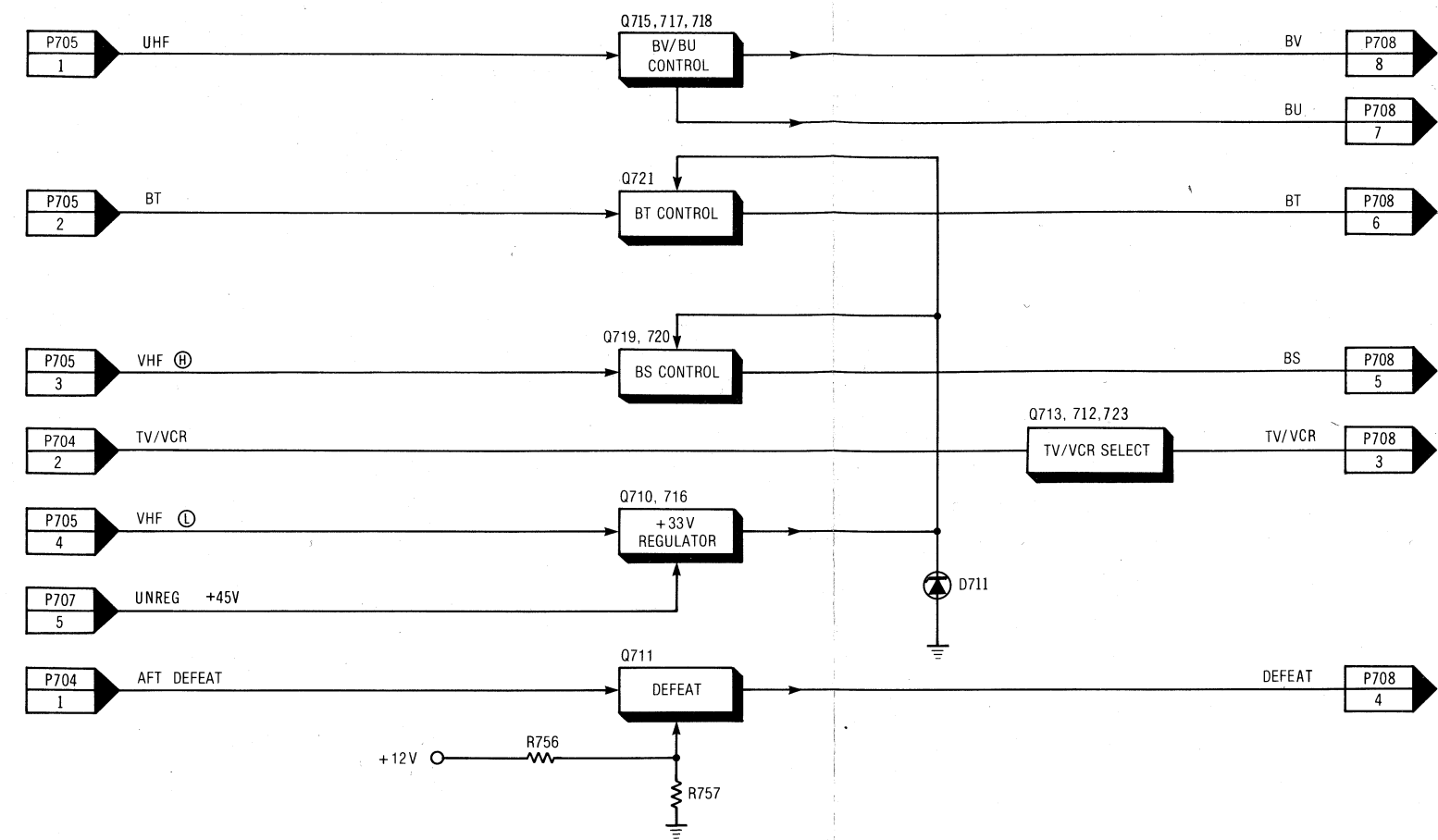
PROGRAMMABLE TIMER BLOCK DIAGRAM



ER BLOCK DIAGRAM

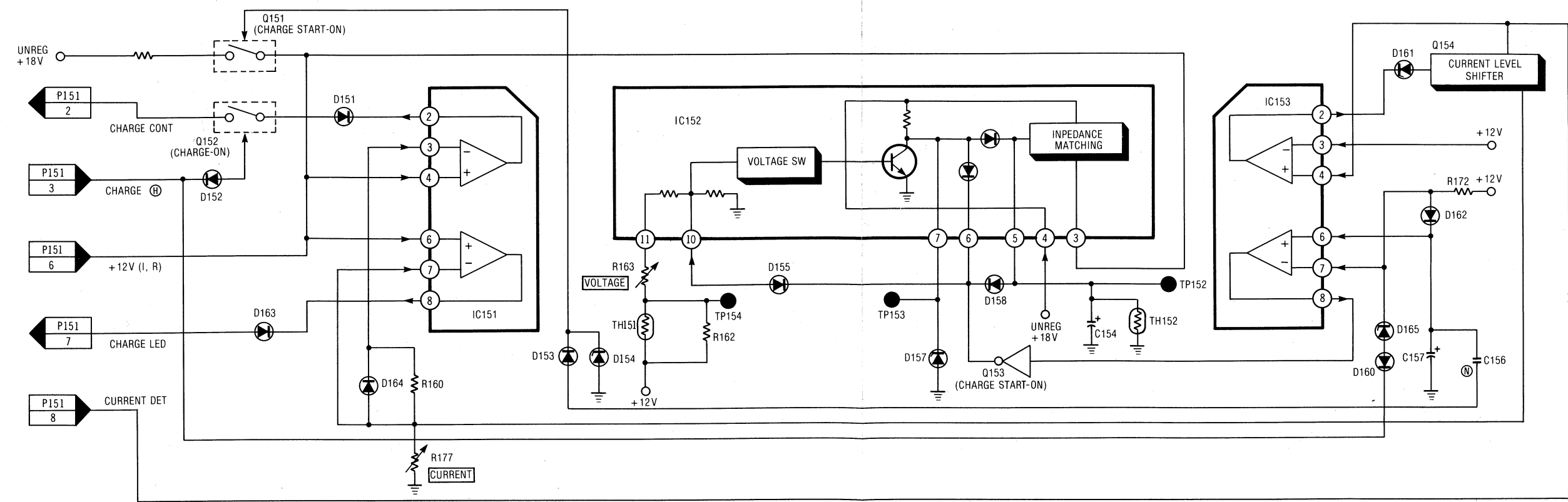


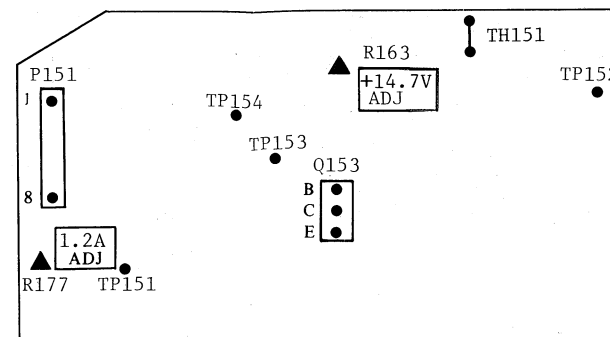
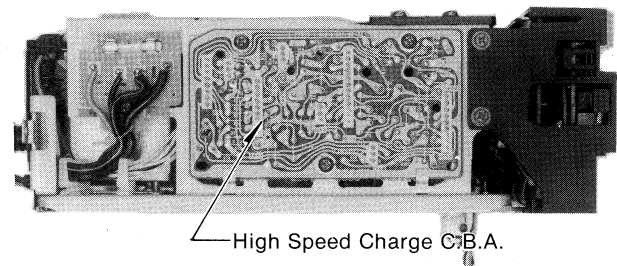
UHF/VHF TUNER POWER CONTROL BLOCK DIAGRAM



7-11
UHF/VHF TUNER POWER CONTROL
BLOCK DIAGRAM
HIGH SPEED CHARGE
BLOCK DIAGRAM

HIGH SPEED CHARGE BLOCK DIAGRAM



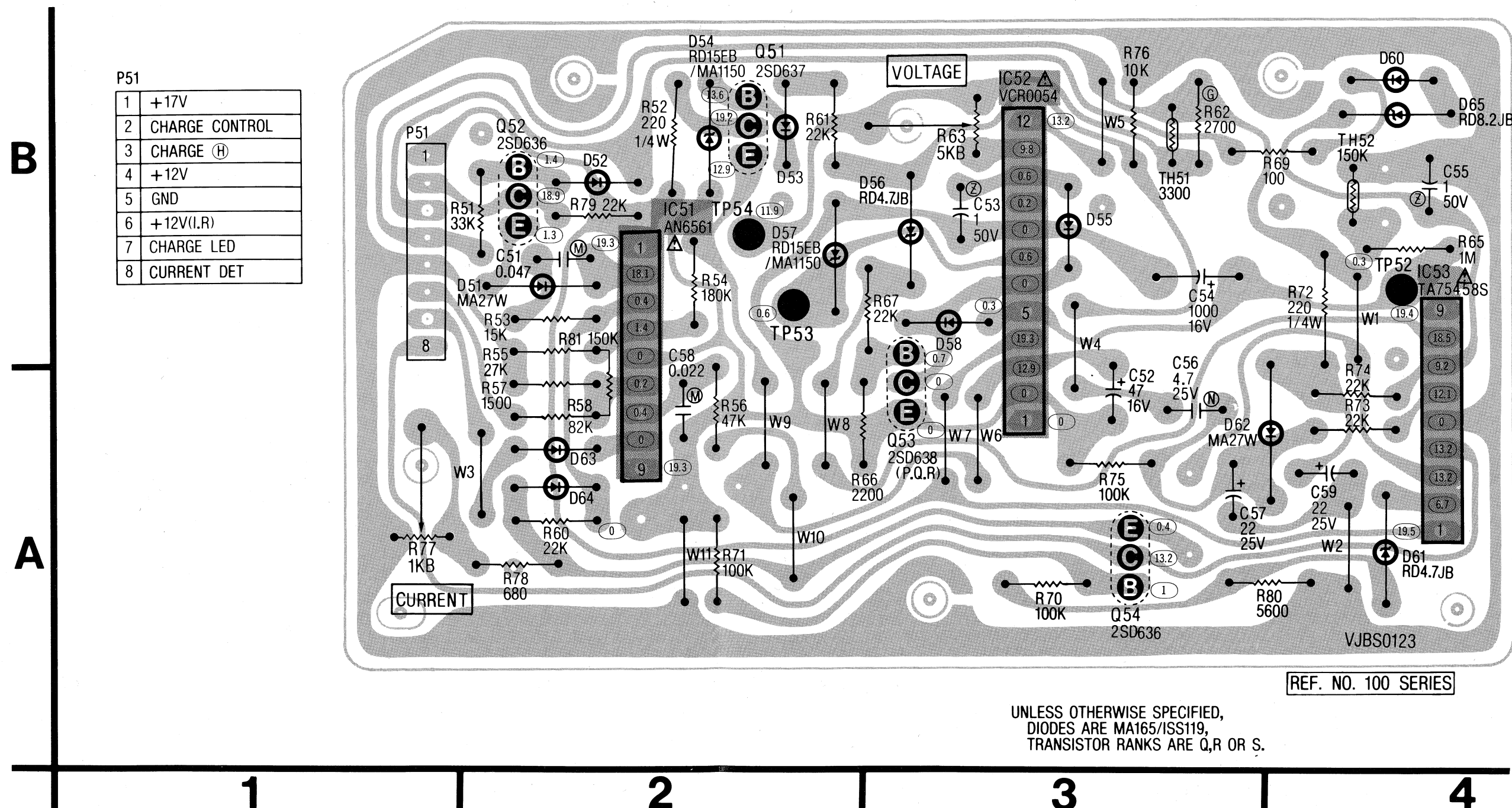


IMPORTANT SAFETY NOTICE

Components identified by shade have special characteristics important for safety. When replacing any of these components, use only the original ones.

High Speed Charge C.B.A.	
Q51	B-2
Q52	B-2
Q53	A-3
Q54	A-3

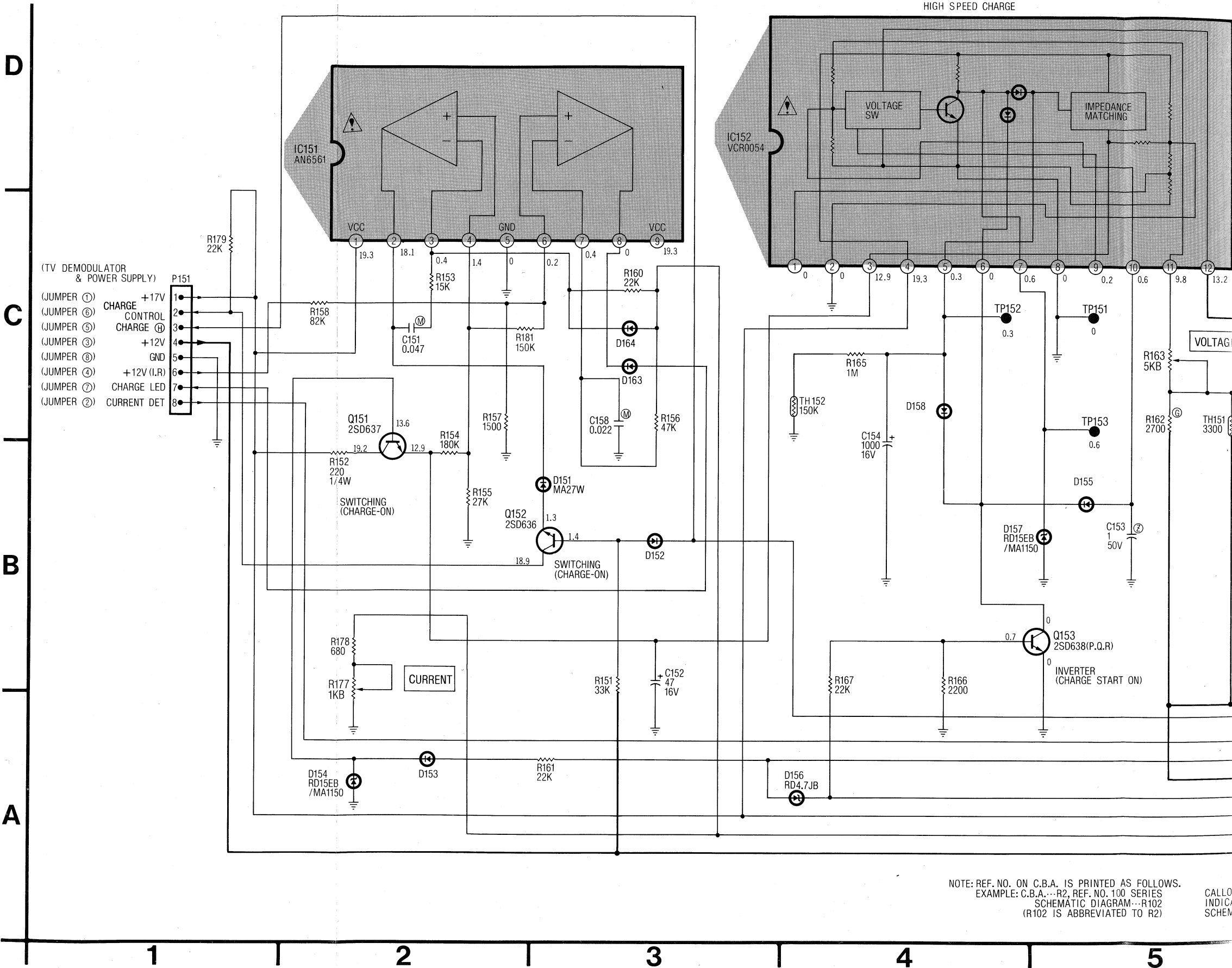
HIGH SPEED CHARGE C.B.A. (VEPS0123A)



HIGH SPEED CHARGE SCHEMATIC DIAGRAM

	STOP			TP No.	STOP
	E	B	C		
Q151	12.9	13.6	19.2	TP151	0
Q152	1.3	1.4	18.9	TP152	0.3
Q153	0	0.7	0	TP153	0.6
Q154	0.4	1.0	13.2	TP154	11.9

PIN NO.	IC151 STOP	PIN NO.	IC152 STOP	PIN NO.	IC153 STOP
PIN 1	19.3	PIN 1	0	PIN 1	19.5
PIN 2	18.1	PIN 2	0	PIN 2	6.7
PIN 3	0.4	PIN 3	12.9	PIN 3	13.2
PIN 4	1.4	PIN 4	19.3	PIN 4	13.2
PIN 5	0	PIN 5	0.3	PIN 5	0
PIN 6	0.2	PIN 6	0	PIN 6	12.1
PIN 7	0.4	PIN 7	0.6	PIN 7	9.2
PIN 8	0	PIN 8	0	PIN 8	18.5
PIN 9	19.3	PIN 9	0.2	PIN 9	19.4
		PIN 10	0.6		
		PIN 11	9.8		
		PIN 12	13.2		





TV DEMODULATOR & POWER SUPPLY C.B.A. (VEPS0735A1)

VJBS0735

P1

1	AUDIO
2	GND
3	VIDEO
4	GND
5	GND

P2

1	TV/VCR
2	GND
3	CATV

P3

1	+6V
2	TV/VCR

JUMPER

A	BV
B	BT
C	BU
D	BS
E	AFT DEFEAT
F	DEFEAT
G	GND
H	+6V
I	+45V
J	+12V
K	+12V(IR)
L	CATV
M	TV/VCR

TO POWER TR C.B.A.
① → P108 ①
② → P108 ②
③ → P108 ③

A

P1

1	AC 16V
2	AC 16V

P2

1	AC 36V
2	AC 36V
3	AC 8V
4	AC 8V
5	AC 2.7V
6	AC 2.7V

P3

1	AC 2.7V
2	AC 2.7V
3	GND
4	+12V
5	-45V

P4

1	POWER LED
2	TIMER SET ON
3	CHARGE LED
4	POWER SW
5	TIMER SET
6	TIMER SET OFF

P5

1	+12V
2	+6V
3	
4	TIMER REC ①
5	GND
6	GND

P6

1	
2	SERIAL DATA
3	CH LOCK/ANT
4	EXT CLOCK
5	SAFETY TAB/CHARGE

P7

1	GND
2	SAFETY TAB/CHARGE
3	SERIAL DATA
4	CH LOCK/ANT
5	EXT CLOCK
6	GND
7	+12V
8	

JUMPER

1	+17V
2	CURRENT DET
3	+12V
4	+12V(IR)
5	CHARGE ①
6	CHARGE CONTROL
7	CHARGE LED
8	GND

Power Supply C.B.A.

Q1	D-5
Q2	C-5
Q3	B-4
Q5	B-4
Q6	B-6
Q7	B-6
Q8	B-3
Q9	B-3
Q10	B-3
Q12	C-7

TV Demodulator C.B.A.

Q1	D-2
Q2	B-2
Q3	C-2
Q4	B-2
Q10	D-2

	STOP		
	E	B	C
Q101	0.2	0.2	21.5
Q102	21.4	20.9	14.1
Q103	0	0.1	3.0
Q105	0	1.4	0.8
Q106	0.7	0.4	16.8
Q107	0.7	1.4	0.7
Q108	11.4	12.7	19.8
Q109	0	0.6	0
Q110	0	0.3	15.2
Q112	50.2	50.0	50.2

	STOP		
	E	B	C
Q701	0	0.1	0
Q702	7.9	7.3	3.2
Q703	9.1	7.3	11.9
Q704	2.6	3.2	9.8
Q710	4.1	4.7	7.4

1

2

3

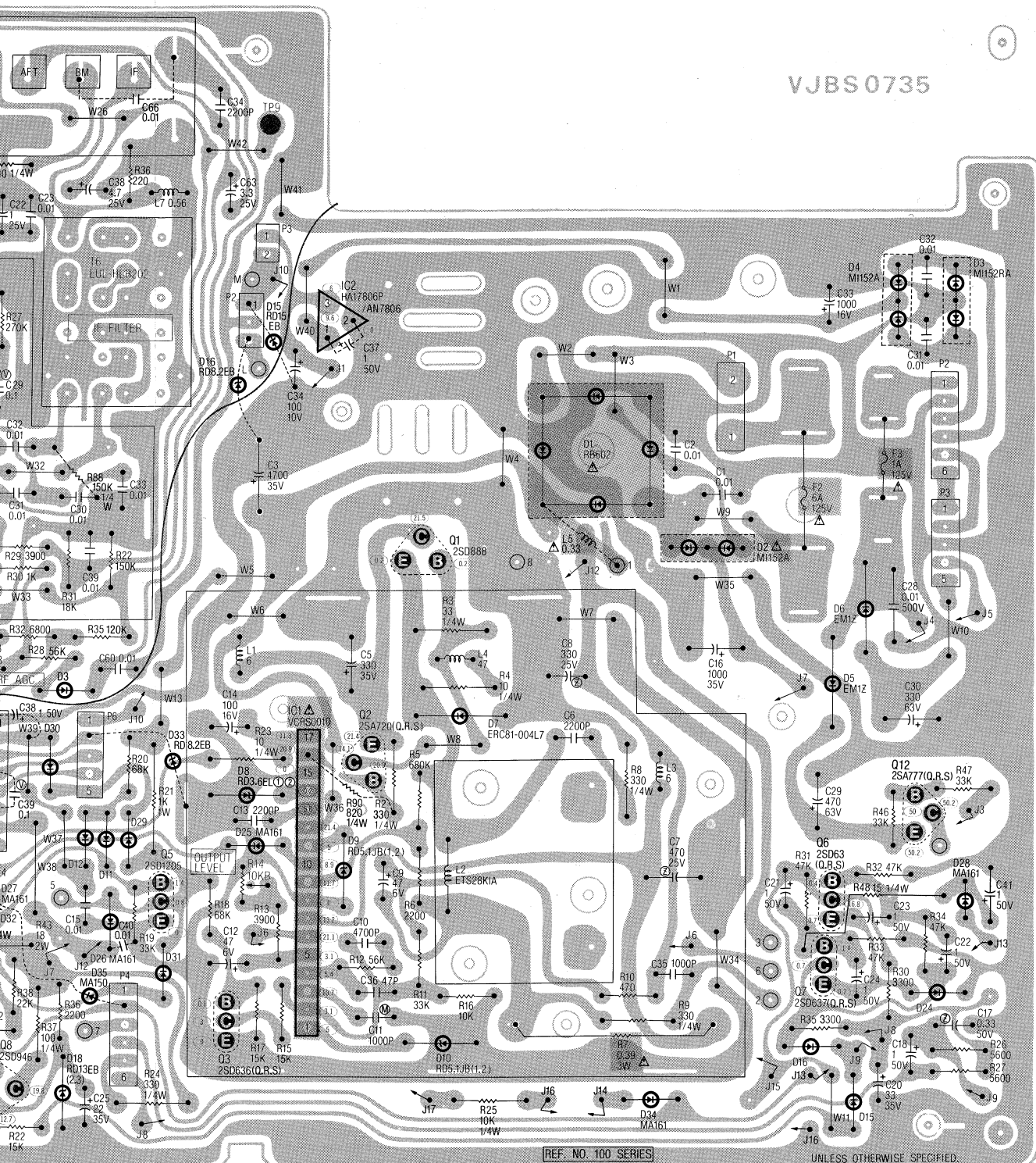
4

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C.B.A. (VEPS0735A1)

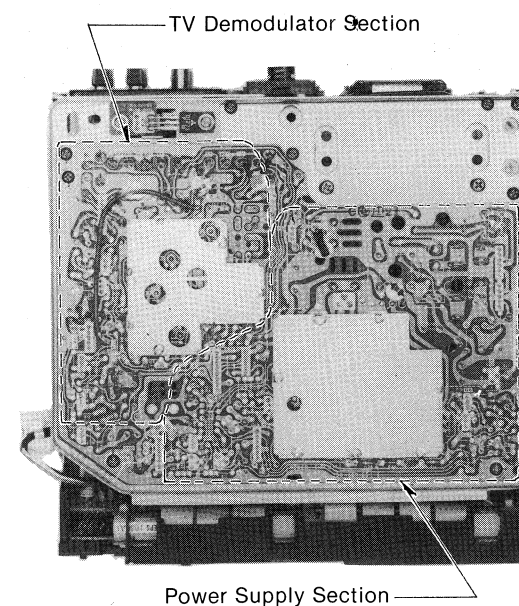


P5	1	+12V
	2	+6V
	3	
	4	TIMER REC @
	5	GND
	6	GND
P6	1	
	2	SERIAL DATA
	3	CH LOCK/ANT
	4	EXT CLOCK
	5	SAFETY TAB/CHARGE
P7	1	GND
	2	SAFETY TAB/CHARGE
	3	SERIAL DATA
	4	CH LOCK/ANT
	5	EXT CLOCK
	6	GND
	7	+12V
	8	
JUMPER	1	+12V
	2	CURRENT DET
	3	+12V
	4	+12V(I/R)
	5	CHARGE @
	6	CHARGE CONTROL
	7	CHARGE LED
	8	GND

VJBS0735

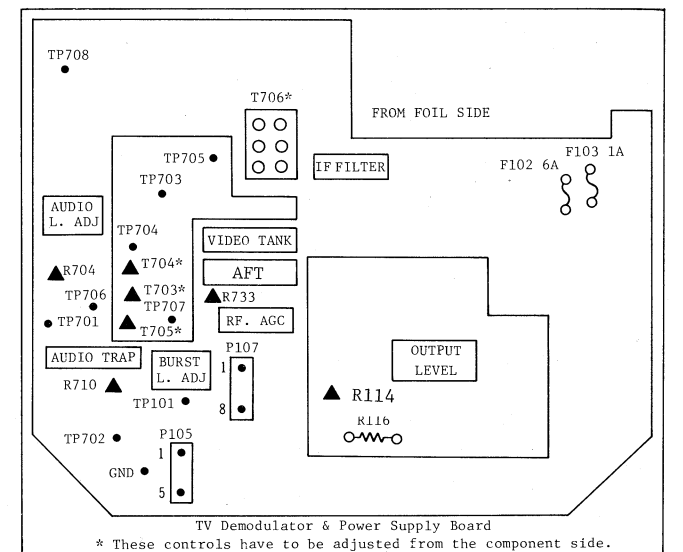
Power Supply C.B.A.			
Q1		D-5	
Q2		C-5	
Q3		B-4	
Q5		B-4	
Q6		B-6	
Q7		B-6	
Q8		B-3	
Q9		B-3	
Q10		B-3	
Q12		C-7	

TV Demodulator C.B.A.			
Q1		D-2	
Q2		B-2	
Q3		C-2	
Q4		B-2	
Q10		D-2	



IMPORTANT SAFETY NOTICE

Components identified by shade Δ have special characteristics important for safety. When replacing any of these components, use only the original ones.



	STOP		
	E	B	C
Q101	0.2	0.2	21.5
Q102	21.4	20.9	14.1
Q103	0	0.1	3.0
Q105	0	1.4	0.8
Q106	0.7	0.4	16.8
Q107	0.7	1.4	0.7
Q108	11.4	12.7	19.8
Q109	0	0.6	0
Q110	0	0.3	15.2
Q112	50.2	50.0	50.2

	STOP		
	E	B	C
Q701	0	0.1	0
Q702	7.9	7.3	3.2
Q703	9.1	7.3	11.9
Q704	2.6	3.2	9.8
Q710	4.1	4.7	7.4

PIN NO.	IC101 STOP
PIN 1	5.0
PIN 2	3.1
PIN 3	10.7
PIN 4	5.4
PIN 5	3.1
PIN 6	21.1
PIN 7	13.2
PIN 8	0
PIN 9	11.7
PIN 10	8.9
PIN 11	5.0
PIN 12	21.4
PIN 13	5.6
PIN 14	0.2
PIN 15	0
PIN 16	20.9
PIN 17	11.3

PIN NO.	IC102 STOP
PIN 1	9.6
PIN 2	0
PIN 3	6.0
PIN NO.	IC701 STOP
PIN 1	3.5
PIN 2	3.5
PIN 3	11.4
PIN 4	0
PIN 5	4.1
PIN 6	4.1
PIN 7	3.6

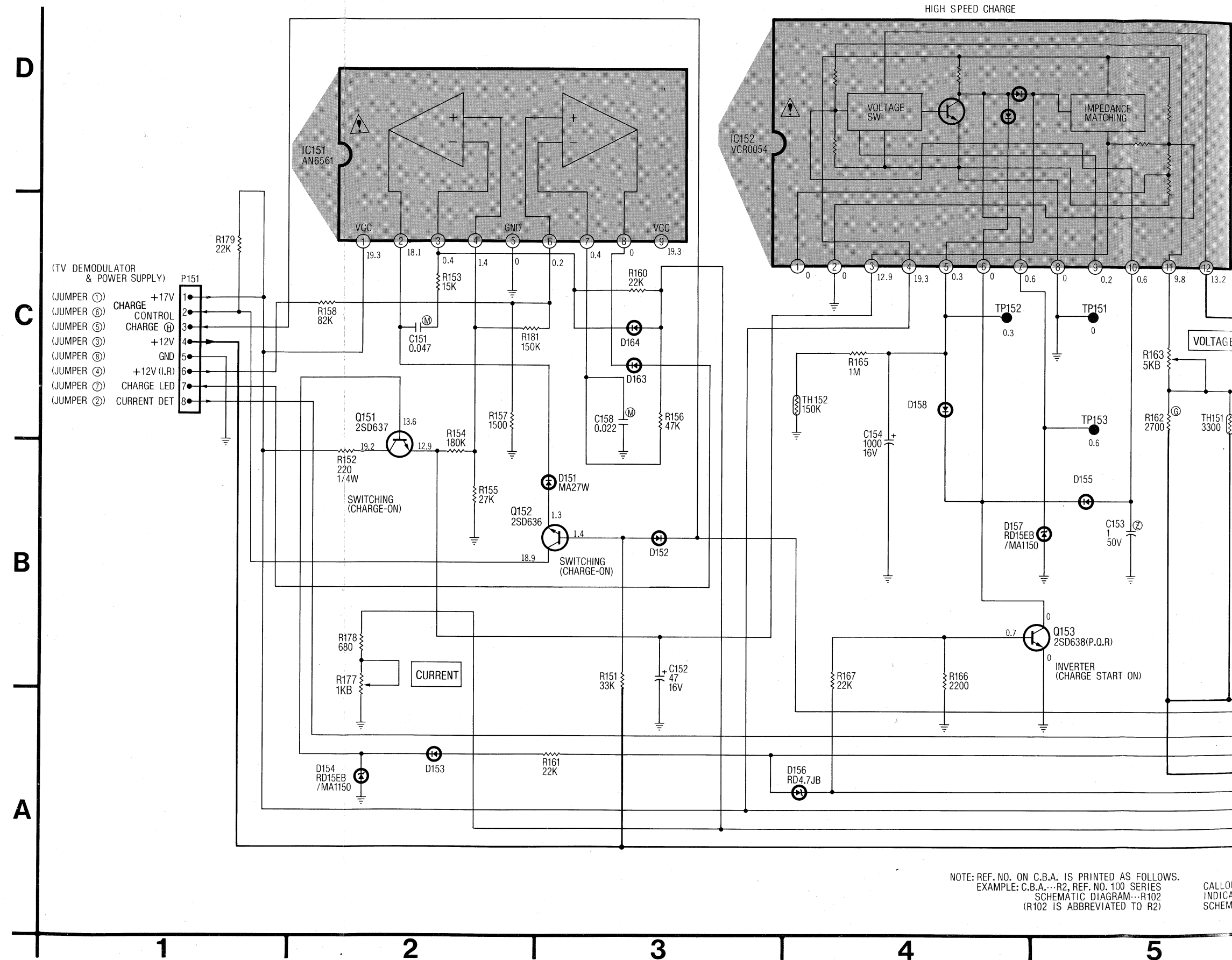
PIN NO.	IC702 STOP
PIN 1	11.9
PIN 2	7.3
PIN 3	5.6
PIN 4	0
PIN 5	4.9
PIN 6	4.9
PIN 7	4.8
PIN 8	4.8
PIN 9	3.8
PIN 10	10.3
PIN 11	4.3
PIN 12	4.2
PIN 13	2.3
PIN 14	5.0
PIN 15	6.7
PIN 16	2.9
PIN 17	7.5
PIN 18	7.5
PIN 19	2.9
PIN 20	6.4
PIN 21	4.2
PIN 22	4.2

TP No.	STOP
TP101	13.2
TP No.	STOP
TP701	0
TP702	0
TP703	7.5
TP704	7.5
TP705	5.6
TP706	7.3
TP707	4.3
TP708	3.5

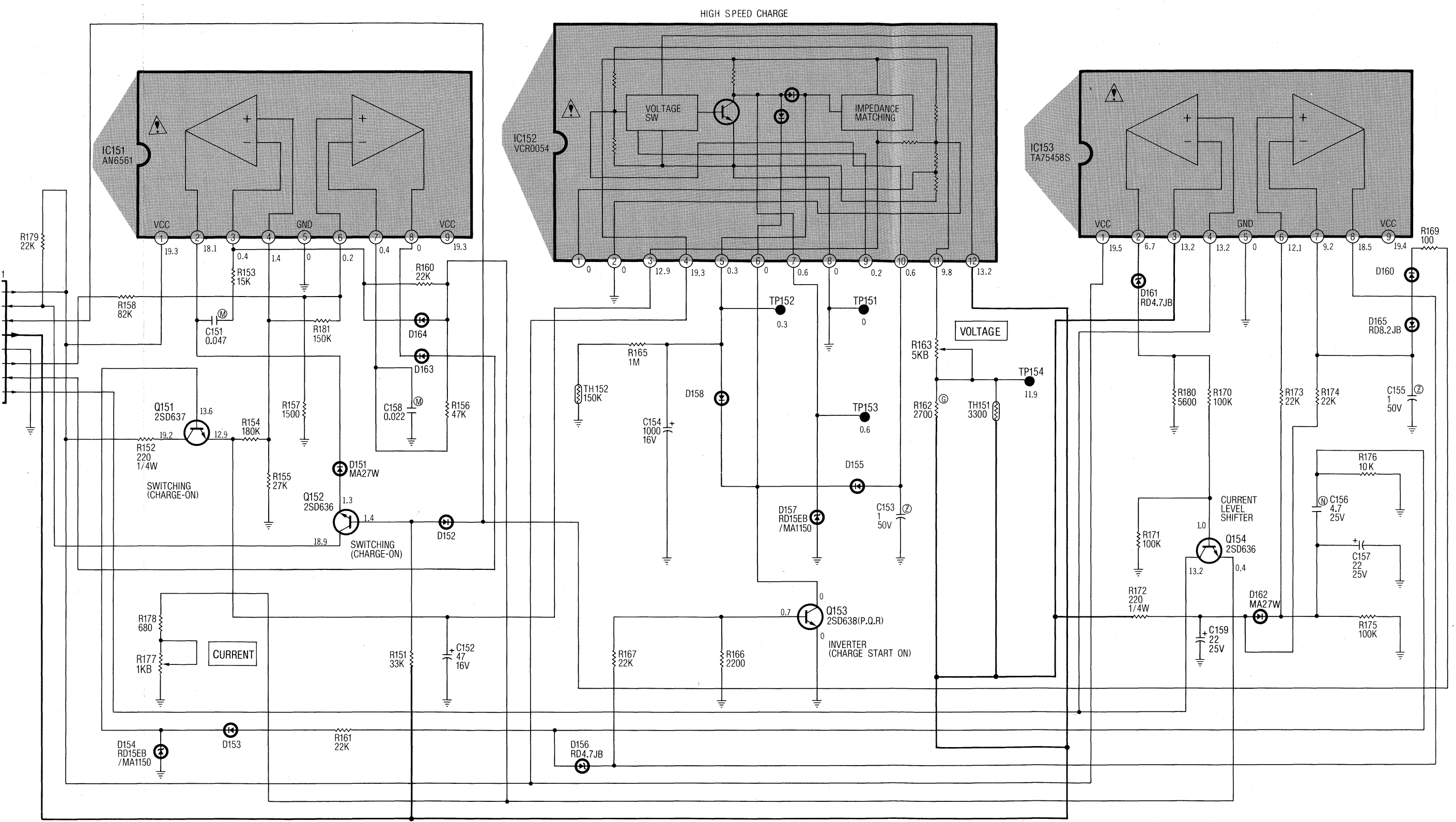
HIGH SPEED CHARGE SCHEMATIC DIAGRAM

	STOP			TP No.	STOP
	E	B	C		
Q151	12.9	13.6	19.2	TP151	0
Q152	1.3	1.4	18.9	TP152	0.3
Q153	0	0.7	0	TP153	0.6
Q154	0.4	1.0	13.2	TP154	11.9

PIN NO.	IC151	PIN NO.	IC152	PIN NO.	IC153
	STOP		STOP		STOP
PIN 1	19.3	PIN 1	0	PIN 1	19.5
PIN 2	18.1	PIN 2	0	PIN 2	6.7
PIN 3	0.4	PIN 3	12.9	PIN 3	13.2
PIN 4	1.4	PIN 4	19.3	PIN 4	13.2
PIN 5	0	PIN 5	0.3	PIN 5	0
PIN 6	0.2	PIN 6	0	PIN 6	12.1
PIN 7	0.4	PIN 7	0.6	PIN 7	9.2
PIN 8	0	PIN 8	0	PIN 8	18.5
PIN 9	19.3	PIN 9	0.2	PIN 9	19.4
		PIN 10	0.6		
		PIN 11	9.8		
		PIN 12	13.2		



CHARGE SCHEMATIC DIAGRAM



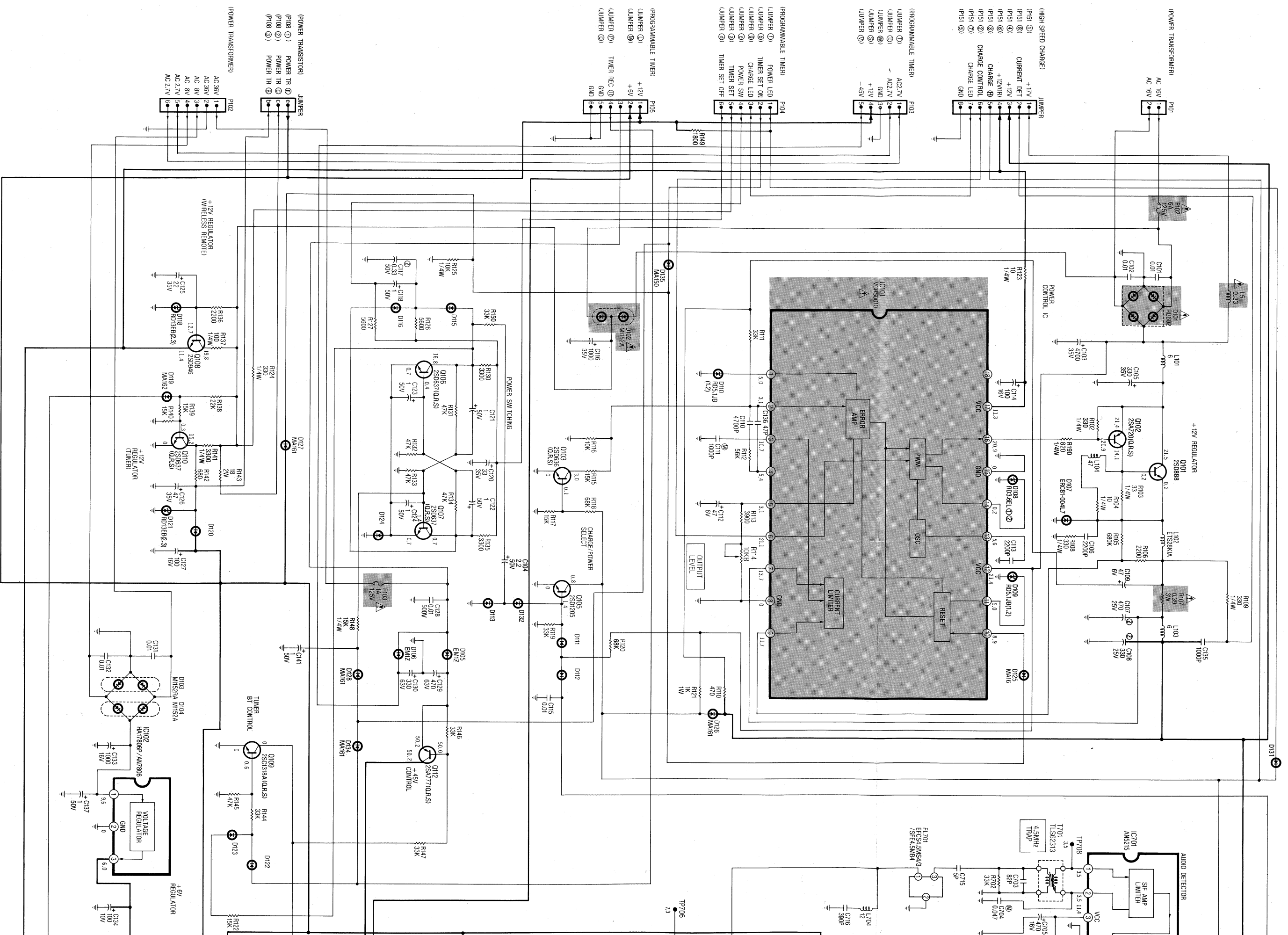
NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 100 SERIES
SCHEMATIC DIAGRAM---R102
(R102 IS ABBREVIATED TO R2)

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

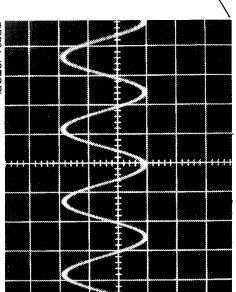
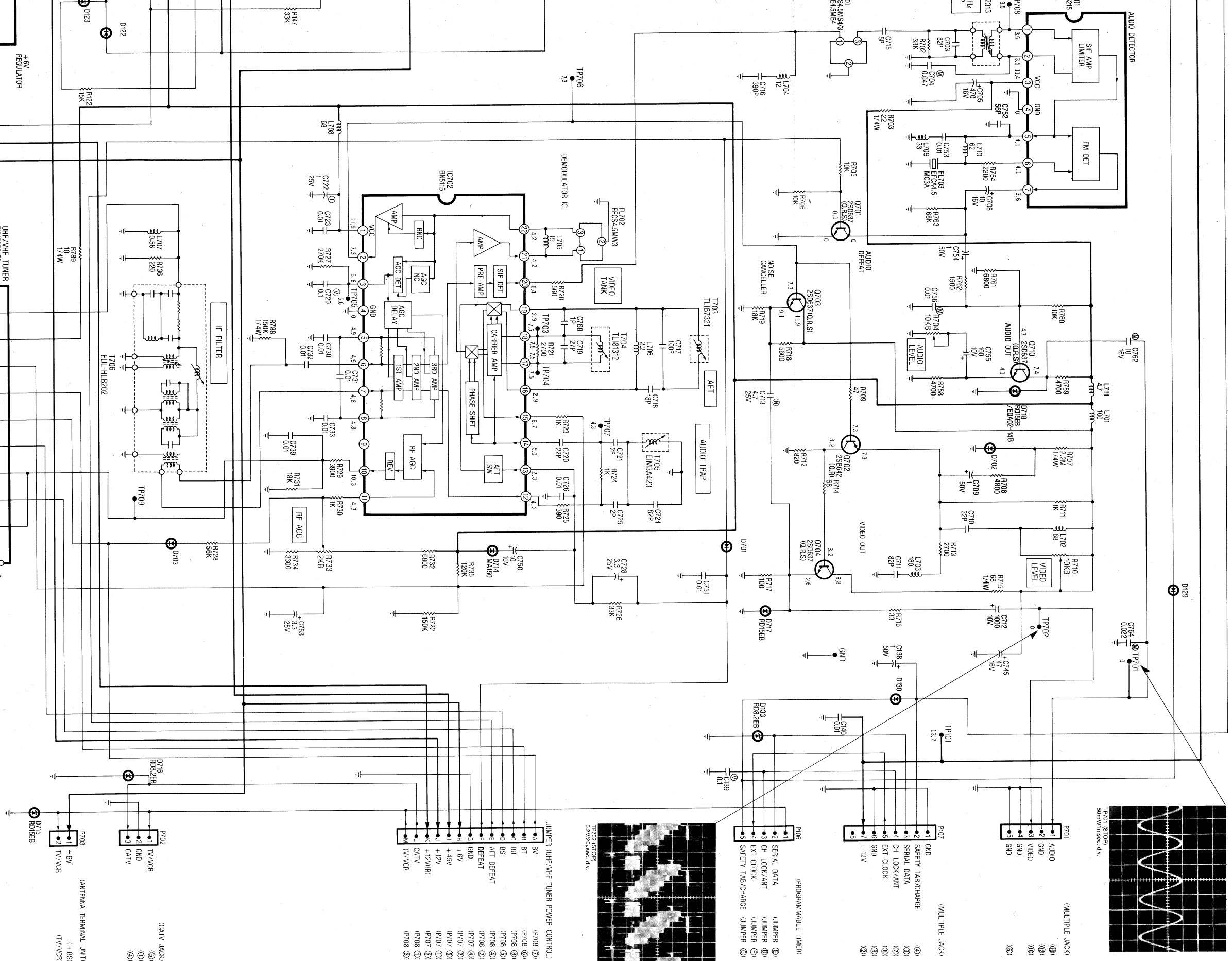
UNLESS OTHERWISE SPECIFIED,
DIODES ARE MA165/ISS119,
TRANSISTOR RANKS ARE Q,R OR S.

VJBS0123

TV DEMODULATOR & POWER SUPPLY SCHEMATIC DIAGRAM



7-15 TV DEMODULATOR & POWER SUPPLY SCHEMATIC DIAGRAM

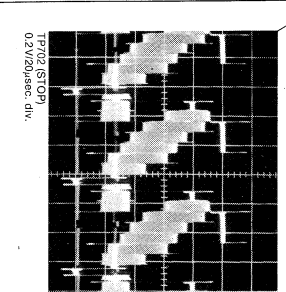


TP701 (STOP)
50mV/msec. div.

- (MULTIPLE JACK)
- 1 AUDIO (1)
 - 2 GND (2)
 - 3 VIDEO (3)
 - 4 GND (4)
 - 5 GND (5)
 - 6 GND (6)

- (MULTIPLE JACK)
- 1 GND (1)
 - 2 SAFETY TAB/CHARGE (2)
 - 3 SERIAL DATA (3)
 - 4 CH LOCK/ANT (4)
 - 5 EXT CLOCK (5)
 - 6 GND (6)
 - 7 +12V (7)

- (PROGRAMMABLE TIMER)
- 1 JUMPER (1)
 - 2 SERIAL DATA (2)
 - 3 CH LOCK/ANT (3)
 - 4 EXT CLOCK (4)
 - 5 SAFETY TAB/CHARGE (5)
 - 6 JUMPER (6)
 - 7 JUMPER (7)
 - 8 JUMPER (8)
 - 9 JUMPER (9)
 - 10 JUMPER (10)
 - 11 JUMPER (11)
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 - 97 JUMPER (97)
 - 98 JUMPER (98)
 - 99 JUMPER (99)
 - 100 JUMPER (100)



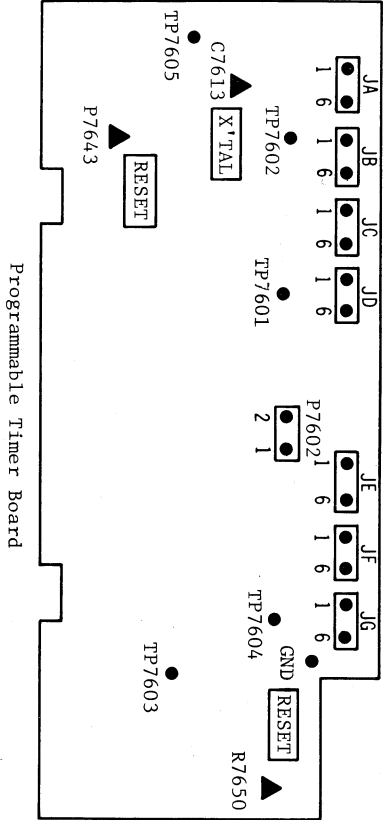
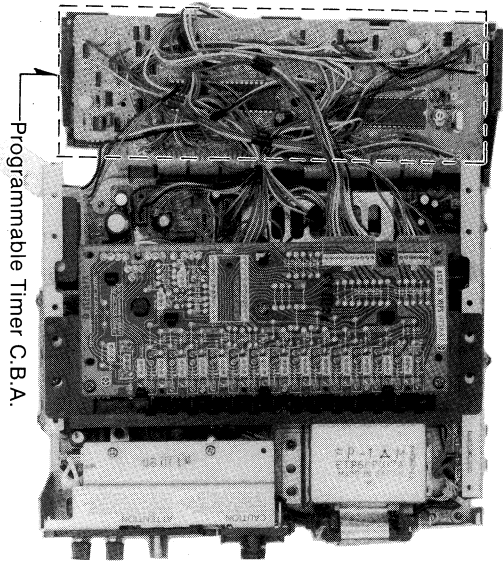
TP702 (STOP)
0.2V/20msec. div.

- (JUMPER (UHF/VHF TUNER POWER CONTROL))
- 1 BV (1)
 - 2 BV (2)
 - 3 BV (3)
 - 4 BV (4)
 - 5 BV (5)
 - 6 BV (6)
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 - 97 BV (97)
 - 98 BV (98)
 - 99 BV (99)
 - 100 BV (100)

- (CATV JACK)
- 1 TV/VCR (1)
 - 2 GND (2)
 - 3 CATV (3)

- (ANTENNA TERMINAL UNIT)
- 1 +6V (1)
 - 2 TV/VCR (2)
 - 3 TV/VCR (3)

PROGRAMMABLE TIMER C.B.A. (VEPS0736A1)



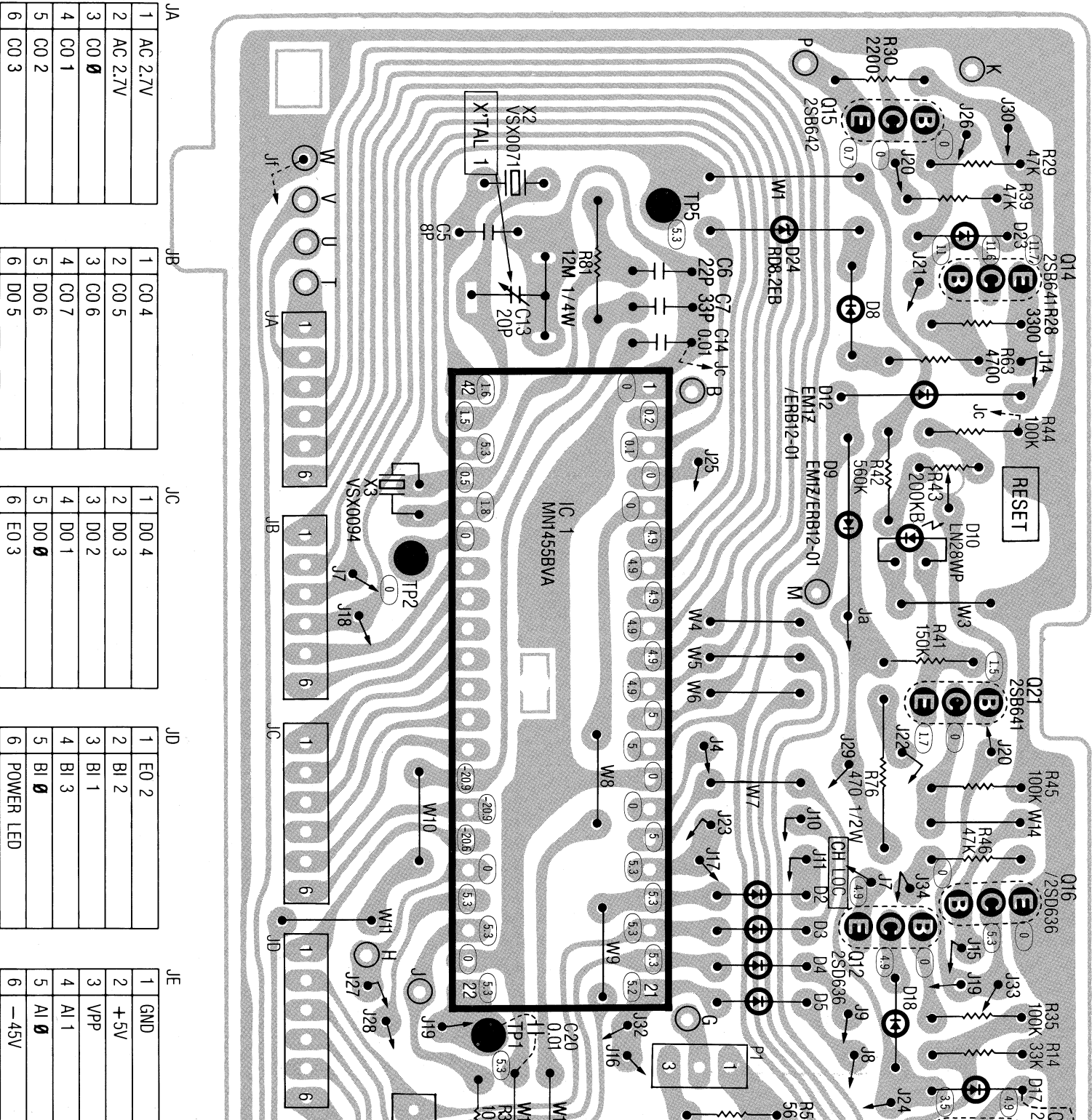
	E	
Q7601	0	
Q7602	0	
Q7603	0	
Q7604	0	
Q7605	-0.3	
Q7606	5.2	
Q7607	5.2	
Q7608	5.2	
Q7609	4.9	
Q7610	5.2	
Q7611	5.2	
Q7612	4.9	
Q7613	4.9	
Q7614	11.7	
Q7615	0.7	
Q7616	0	
Q7617	0	
Q7618	0	
Q7619	0	
Q7620	0	
Q7621	1.7	

PROGRA

P7601	
1	IR REMOTE
2	+12V(L,R)
3	GND

JUMPER	
1	BACKUP ⊕
2	GND

JUMPER	
A	AFT DEFEAT
B	TV/VCR
C	SAFETY TAB/CHARGE
D	CH LOCK/ANT
E	SERIAL DATA
F	EXT CLOCK
G	+12V(LR)
H	CH RESET
I	CH UP
J	SINS 0
K	GND
L	+12V
M	+6V
N	
P	TIMER REC ⊕
Q	GND
S	+12V
T	AC2.7V
U	AC2.7V
V	-45V
W	GND
a	TIMER SET
b	TIMER SET ON
d	TIMER SET OFF
e	POWER SW
f	POWER LED
g	CHARGE LED



JA	
1	AC 2.7V
2	AC 2.7V
3	CO 0
4	CO 1
5	CO 2
6	CO 3

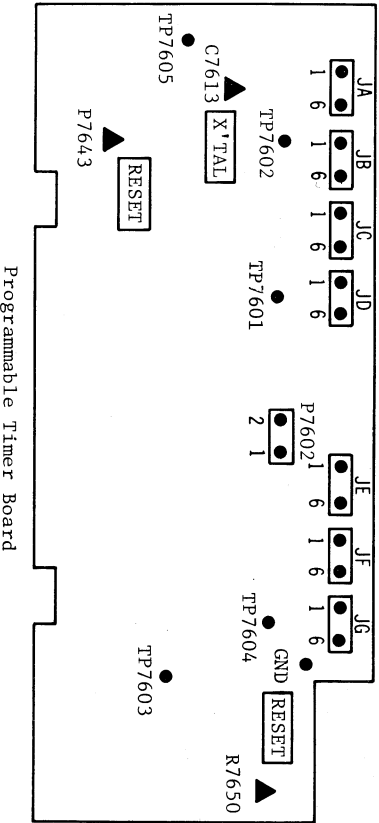
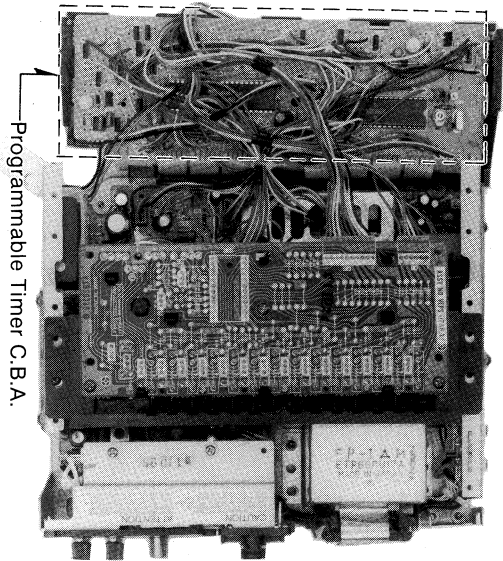
JB	
1	CO 4
2	CO 5
3	CO 6
4	CO 7
5	DO 6
6	DO 5

JC	
1	DO 4
2	DO 3
3	DO 2
4	DO 1
5	DO 0
6	EO 3

JD	
1	EO 2
2	BI 2
3	BI 1
4	BI 3
5	BI 0
6	POWER LED

JE	
1	GND
2	+5V
3	VPP
4	AI 1
5	AI 0
6	-45V

PROGRAMMABLE TIMER C.B.A. (VEPS0736A1)



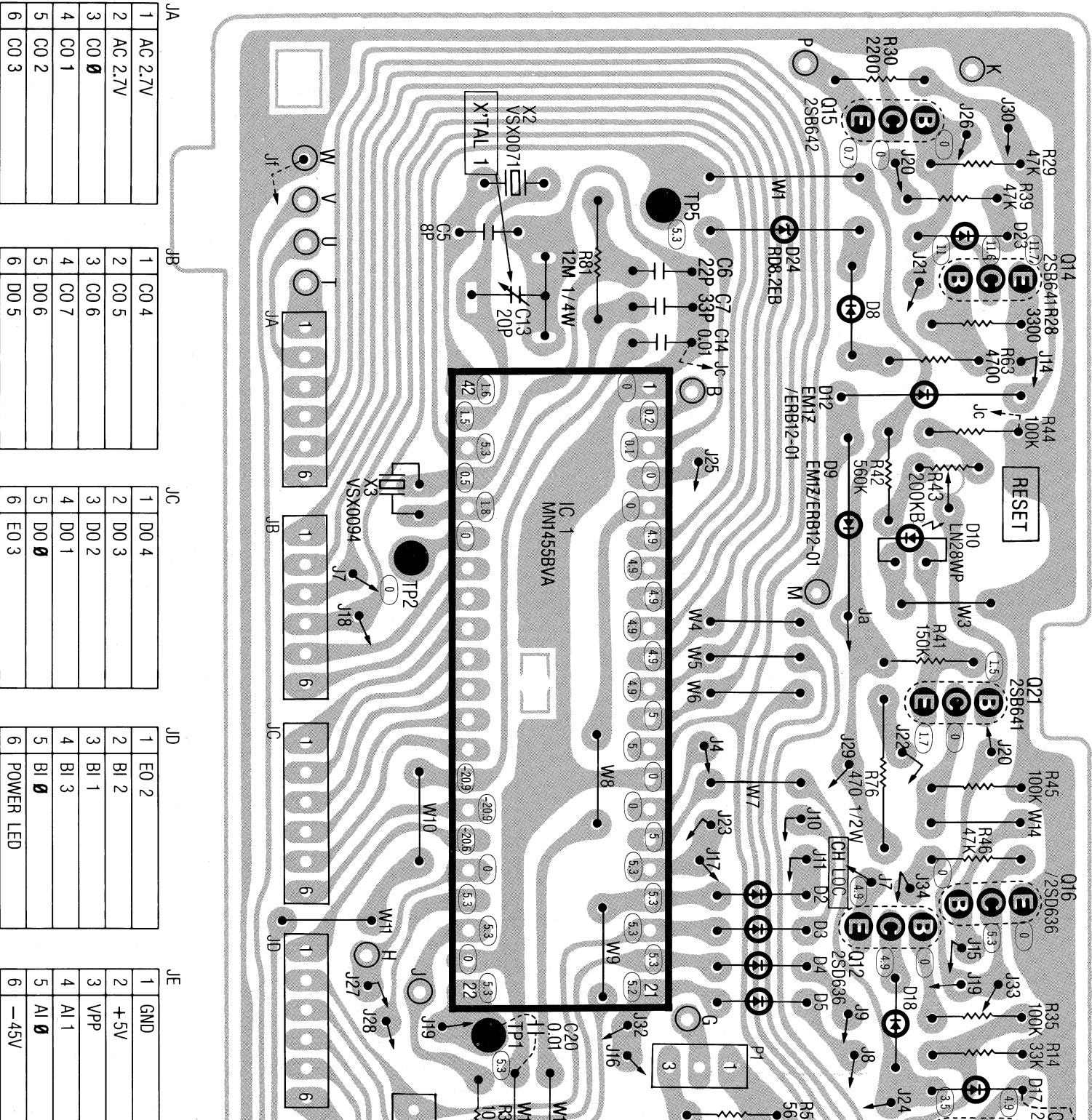
	E	
Q7601	0	
Q7602	0	
Q7603	0	
Q7604	0	
Q7605	-0.3	
Q7606	5.2	
Q7607	5.2	
Q7608	5.2	
Q7609	4.9	
Q7610	5.2	
Q7611	5.2	
Q7612	4.9	
Q7613	4.9	
Q7614	11.7	
Q7615	0.7	
Q7616	0	
Q7617	0	
Q7618	0	
Q7619	0	
Q7620	0	
Q7621	1.7	

PROGRA

P7601	
1	IR REMOTE
2	+12V(L,R)
3	GND

JUMPER	
1	BACKUP ⊕
2	GND

JUMPER	
A	AFT DEFEAT
B	TV/VCR
C	SAFETY TAB/CHARGE
D	CH LOCK/ANT
E	SERIAL DATA
F	EXT CLOCK
G	+12V(LR)
H	CH RESET
I	CH UP
J	SINS 0
K	GND
L	+12V
M	+6V
N	
P	TIMER REC ⊕
Q	GND
S	+12V
T	AC2.TV
U	AC2.TV
V	-45V
W	GND
a	TIMER SET
b	TIMER SET ON
d	TIMER SET OFF
e	POWER SW
f	POWER LED
g	CHARGE LED



JA	
1	AC 2.7V
2	AC 2.7V
3	CO 0
4	CO 1
5	CO 2
6	CO 3

JB	
1	CO 4
2	CO 5
3	CO 6
4	CO 7
5	DO 6
6	DO 5

JC	
1	DO 4
2	DO 3
3	DO 2
4	DO 1
5	DO 0
6	EO 3

JD	
1	EO 2
2	BI 2
3	BI 1
4	BI 3
5	BI 0
6	POWER LED

JE	
1	GND
2	+5V
3	VPP
4	AI 1
5	AI 0
6	-45V

STOP			
	E	B	C
Q7601	0	0.6	-0.1
Q7602	0	0.1	4.8
Q7603	0	0	4.6
Q7604	0	0.6	0
Q7605	-0.3	5.2	-0.3
Q7606	5.2	4.9	0
Q7607	5.2	4.6	5.2
Q7608	5.2	4.5	5.1
Q7609	4.9	0.3	5.0
Q7610	5.2	0	5.3
Q7611	5.2	5.2	0
Q7612	4.9	0	4.9
Q7613	4.9	3.5	4.7
Q7614	11.7	11.0	11.6
Q7615	0.7	0	0
Q7616	0	0	5.3
Q7617	0	0	5.2
Q7618	0	0.6	0
Q7619	0	0.4	-0.1
Q7620	0	0.2	0.1
Q7621	1.7	1.5	0

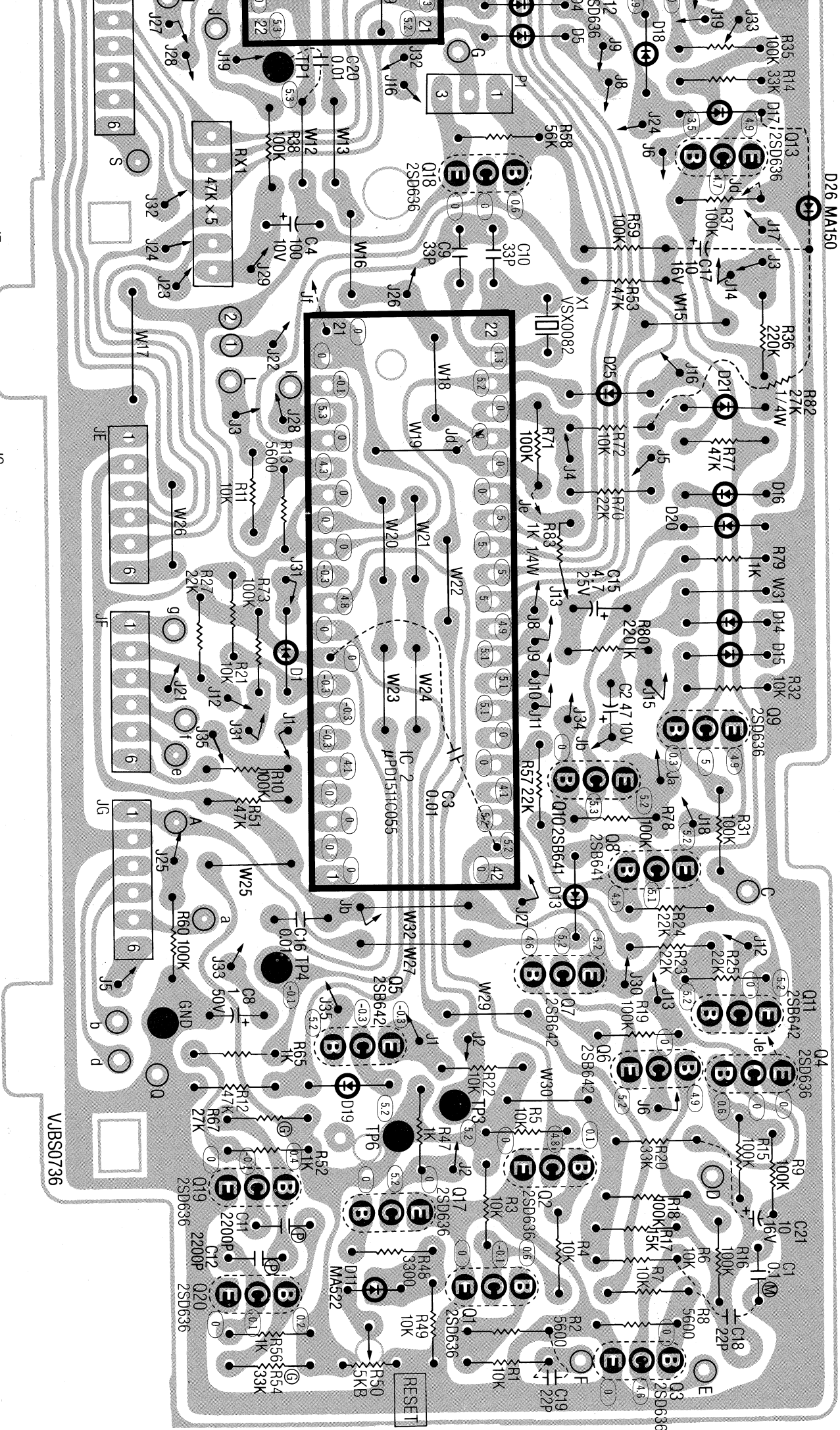
PIN NO.	IC7601		
	STOP	PIN No.	STOP
PIN 1	0	PIN 22	5.3
PIN 2	0.2	PIN 23	0
PIN 3	0.1	PIN 24	5.3
PIN 4	0	PIN 25	5.3
PIN 5	0	PIN 26	0
PIN 6	4.9	PIN 27	-20.6
PIN 7	4.9	PIN 28	-20.9
PIN 8	4.9	PIN 29	-20.9
PIN 9	4.9	PIN 30	*
PIN 10	4.9	PIN 31	*
PIN 11	4.9	PIN 32	*
PIN 12	5.0	PIN 33	*
PIN 13	5.0	PIN 34	*
PIN 14	0	PIN 35	*
PIN 15	0	PIN 36	*
PIN 16	5.0	PIN 37	0
PIN 17	5.3	PIN 38	1.8
PIN 18	5.3	PIN 39	0.5
PIN 19	5.3	PIN 40	5.3
PIN 20	5.3	PIN 41	1.5
PIN 21	5.2	PIN 42	1.6

PIN NO.	IC7602		
	STOP	Pin No.	STOP
PIN 1	0	PIN 22	2.0
PIN 2	0	PIN 23	1.3
PIN 3	0	PIN 24	5.2
PIN 4	0	PIN 25	0
PIN 5	4.1	PIN 26	0
PIN 6	-0.3	PIN 27	0
PIN 7	-0.3	PIN 28	0
PIN 8	-0.3	PIN 29	5.0
PIN 9	0	PIN 30	5.0
PIN 10	0	PIN 31	5.0
PIN 11	4.8	PIN 32	5.0
PIN 12	-0.3	PIN 33	4.9
PIN 13	0	PIN 34	5.1
PIN 14	0	PIN 35	5.1
PIN 15	0	PIN 36	5.1
PIN 16	4.3	PIN 37	0
PIN 17	0	PIN 38	0
PIN 18	5.3	PIN 39	4.1
PIN 19	-0.1	PIN 40	5.2
PIN 20	0	PIN 41	5.2
PIN 21	0	PIN 42	0

TP No.	STOP
TP7601	5.3
TP7602	0
TP7603	5.2
TP7604	-0.1
TP7605	5.3
TP7606	5.2

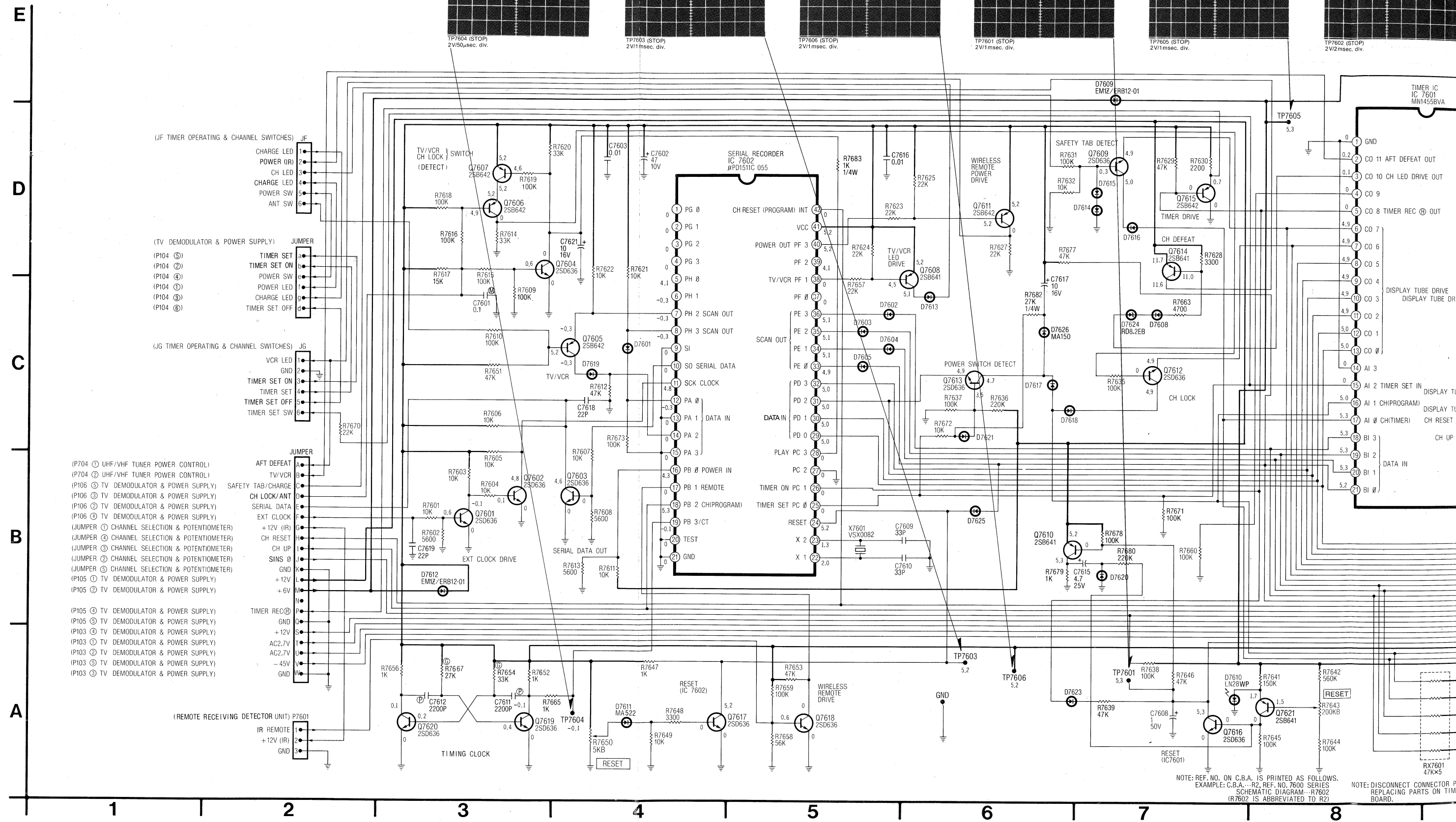
Programmable Timer C.B.A.	
Q1	B-7
Q2	B-7
Q3	C-7
Q4	C-6
Q5	B-6
Q6	C-6
Q7	B-6
Q8	C-6
Q9	C-5
Q10	C-6
Q11	C-6
Q12	C-4
Q13	C-4
Q14	C-2
Q15	C-2
Q16	C-4
Q17	B-7
Q18	B-4
Q19	B-7
Q20	B-7
Q21	C-3

PROGRAMMABLE TIMER C.B.A. VEPS0736A1



UNLESS OTHERWISE SPECIFIED,
DIODES ARE MA165/ISS119,
TRANSISTOR RANKS ARE Q OR R.

PROGRAMMABLE TIMER SCHEMATIC DIAGRAM





TIMER OPERATING & CHANNEL SWITCHES C.B.A. (VEPS0737A1)

C

B

A

JUMPER

1	CH1
2	CH2
3	CH3
4	CH4
5	CH5
6	CH6
7	CH7
8	CH8
9	CH9
10	CH10
11	CH11
12	CH12
13	CH13
14	CH14
15	AFT
16	GND

JA

1	AC 2.7V
2	AC 2.7V
3	C00
4	C01
5	C02
6	C03

JB

1	C04
2	C05
3	C06
4	C07
5	D06
6	D05

JC

1	D04
2	D03
3	D02
4	D01
5	D00
6	E03

JD

1	E02
2	BI2
3	BI1
4	BI3
5	BI0
6	POWER LED

JE

1	GND
2	+5V
3	VPP
4	AI1
5	AI0
6	-45V

JF

1	CHARGE LED
2	POWER(I.R)
3	CHANNEL LED
4	CHARGE LED
5	POWER SW
6	ANTENNA SW

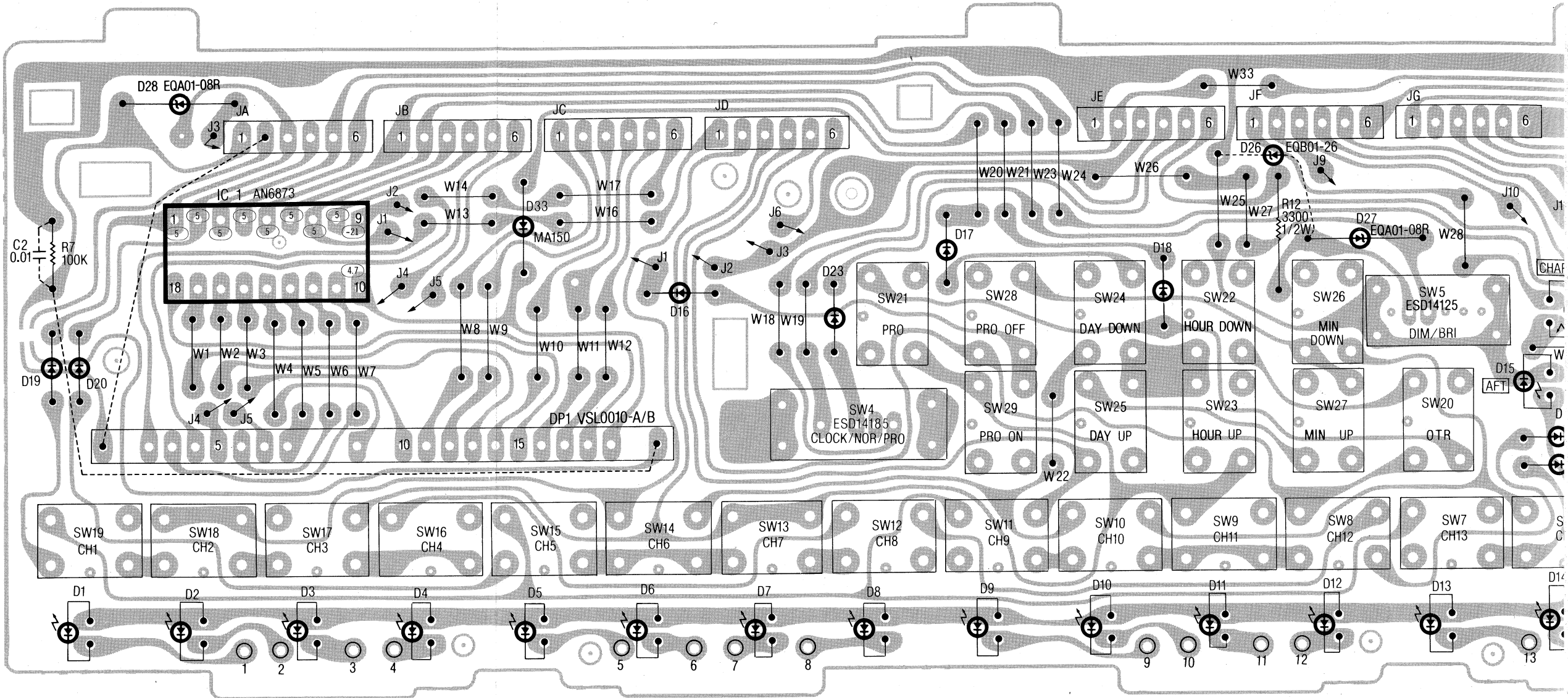
JG

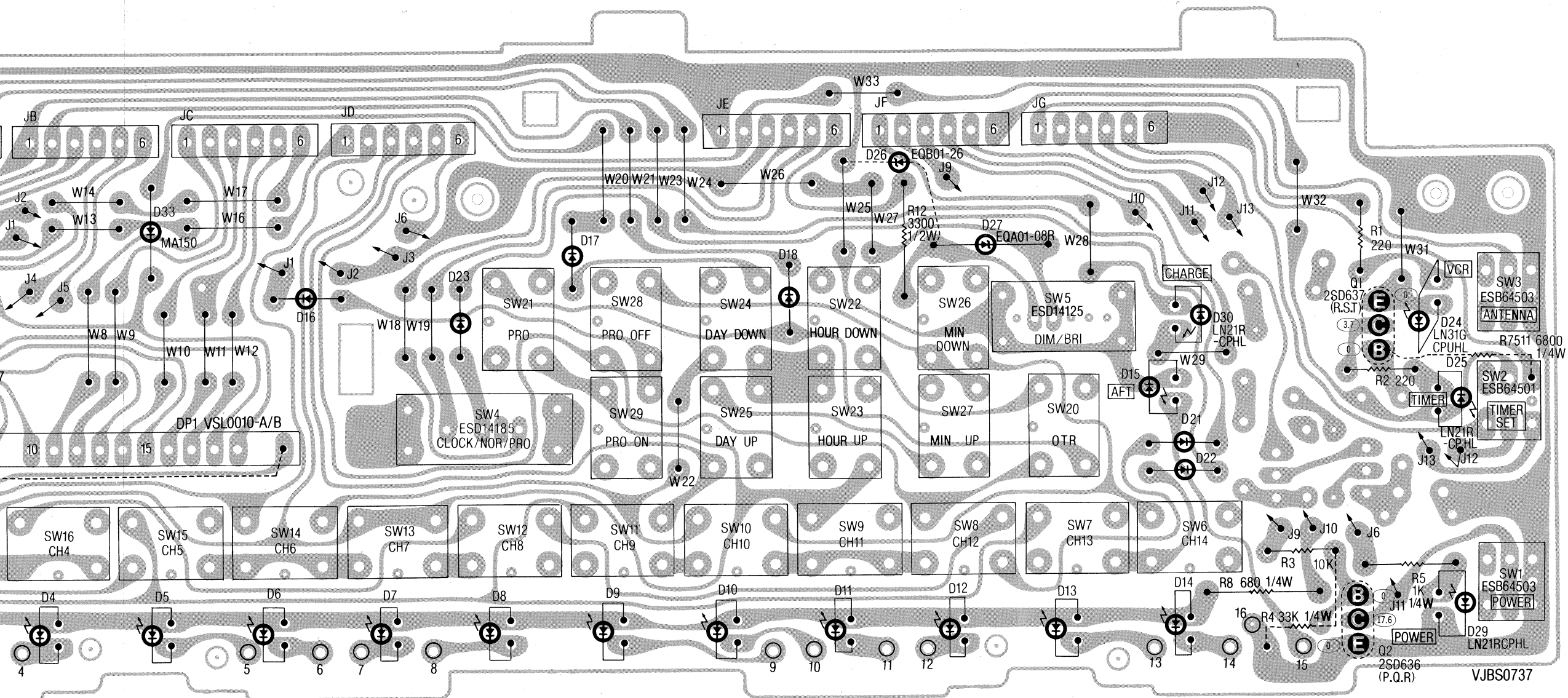
1	VCR LED
2	GND
3	TIMER SET ON
4	TIMER SET
5	TIMER SET OFF
6	TIMER SET SW

REF. NO. 7500 SERIES

CH LEDS

D1~D15
LN31GCPUHL x 15





REF. NO. 7500 SERIES

CH LEDS
D1~D15
LN31GCPUHL × 15

SW6~SW29
EVQ-QJ104K×24

UNLESS OTHERWISE SPECIFIED,
DIODES ARE MA165/ISS119.

JF	
1	CHARGE LED
2	POWER(I.R)
3	CHANNEL LED
4	CHARGE LED
5	POWER SW
6	ANTENNA SW

JG	
1	VCR LED
2	GND
3	TIMER SET ON
4	TIMER SET
5	TIMER SET OFF
6	TIMER SET SW

	STOP		
	E	B	C
Q7501	0	0	3.7
Q7502	0	0	17.6

PIN NO.	IC7501
	STOP
PIN 1	5.0
PIN 2	5.0
PIN 3	5.0
PIN 4	5.0
PIN 5	5.0
PIN 6	5.0
PIN 7	5.0
PIN 8	5.0
PIN 9	-21.0
PIN 10	4.7
PIN 11	*
PIN 12	*
PIN 13	*
PIN 14	*
PIN 15	*
PIN 16	*
PIN 17	*
PIN 18	*

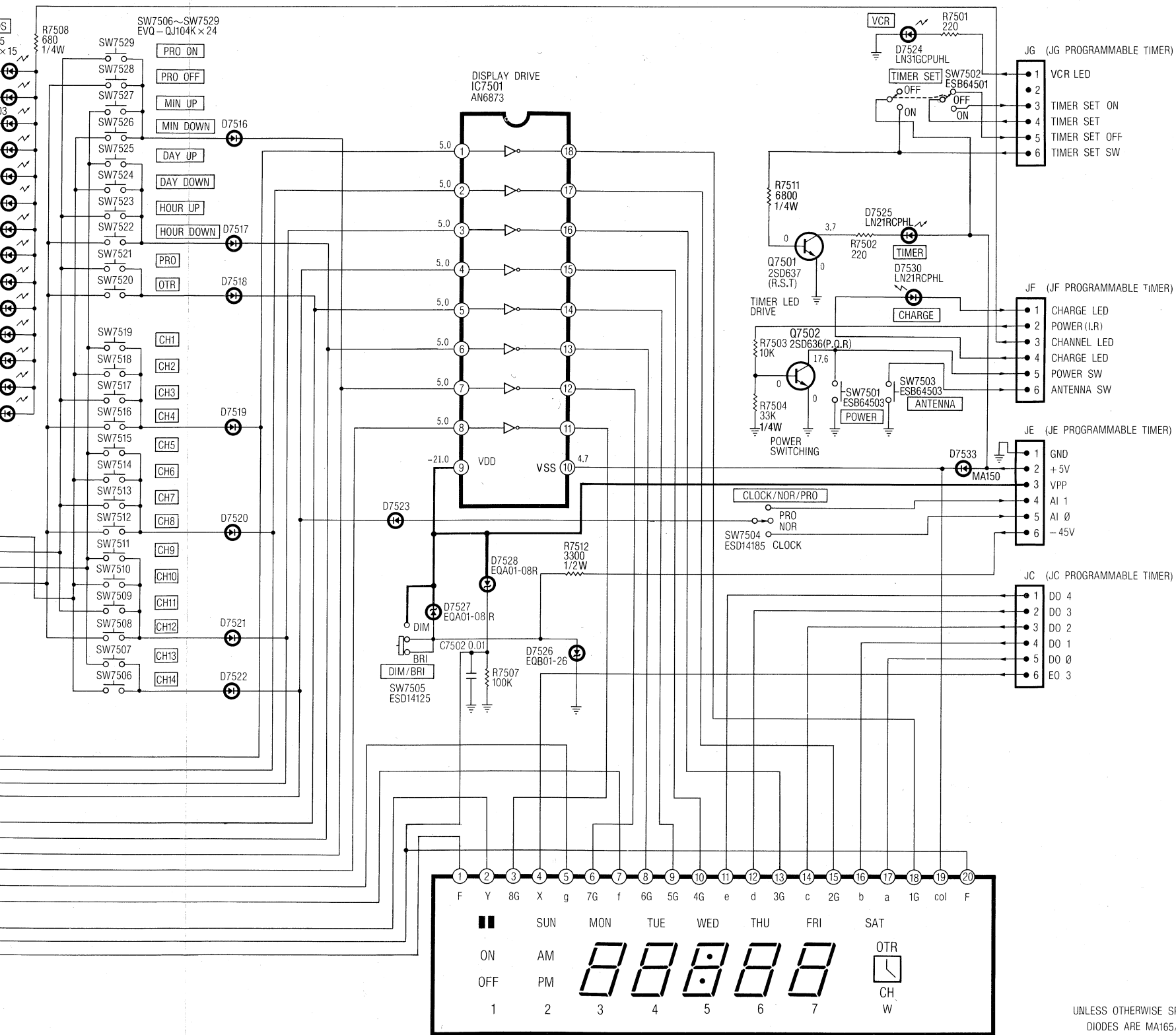
A vertical scale with four horizontal tick marks. The marks are labeled A, B, C, and D from bottom to top. The labels are in a bold, sans-serif font.



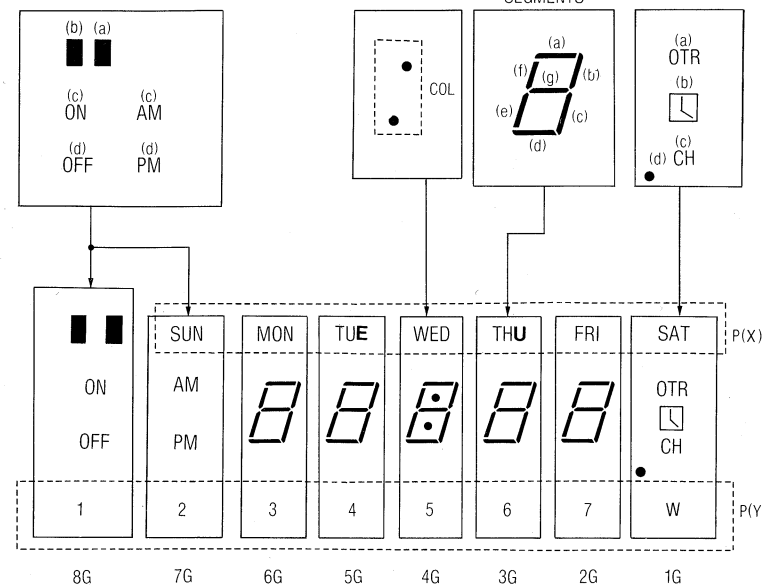
CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

7-19

L SWITCHES SCHEMATIC DIAGRAM



TIMER DISPLAY (DP7501)
CONNECTION CHART



VJBSO737

DP7501
VSL0010-A/B
DISPLAY TUBE

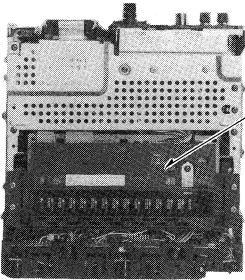
NOTE: REF NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 7500 SERIES
SCHEMATIC DIAGRAM---R7502
(R7502 IS ABBREVIATED TO R2)

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

7-19 TIMER OPERATING & CHANNEL SWITCHES SCHEMATIC DIAGRAM

7-20 CHANNEL SELECTION & POTENTIOMETER C.B.A.

CHANNEL SELECTION & POTENTIOMETER C.B.A. (VEPS0738A1)



Channel Section & Potentiometer C.B.A.

B

A

P7301

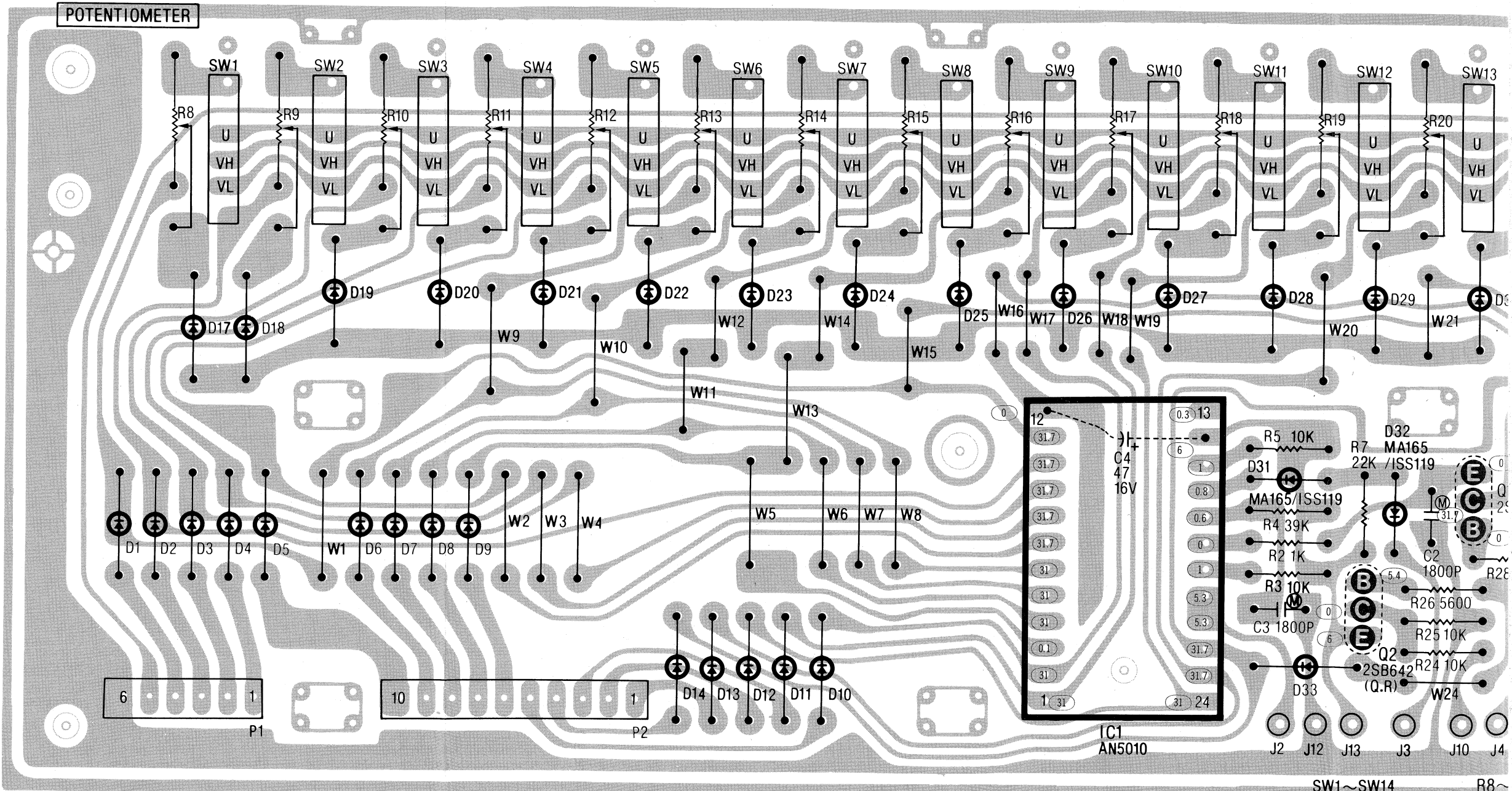
1	CH4
2	CH3
3	CH2
4	CH1
5	AFT
6	GND

P7302

1	CH13
2	CH12
3	CH11
4	CH14
5	CH10
6	CH9
7	CH8
8	CH7
9	CH6
10	CH5

JUMPER

1	+12V(I.R)
2	SINS
3	CH UP
4	CH RESET
5	GND
6	UHF
7	VHF
8	VHF
9	BT
10	CATV
11	AFT
12	GND
13	+6V
14	+12V
15	+12V(IR)



	STOP		
	E	B	C
Q7301	0	0	31.7
Q7302	6.0	5.4	0

PIN NO.	IC7301
	STOP
PIN 1	31.0
PIN 2	31.0
PIN 3	0.1
PIN 4	31.0
PIN 5	31.0
PIN 6	31.0
PIN 7	31.7
PIN 8	31.7
PIN 9	31.7
PIN 10	31.7
PIN 11	31.7
PIN 12	0
PIN 13	0.3
PIN 14	6.0
PIN 15	1.0
PIN 16	0.8
PIN 17	0.6
PIN 18	0
PIN 19	1.0
PIN 20	5.3
PIN 21	5.3
PIN 22	31.7
PIN 23	31.7
PIN 24	31.0



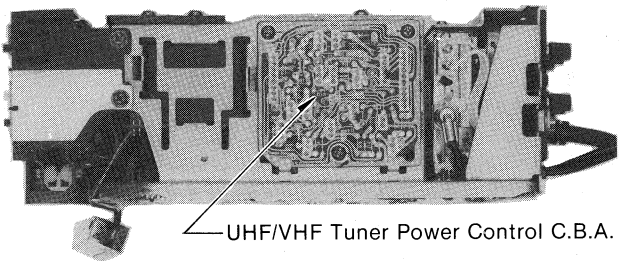
4

5

6



UHF/VHF TUNER POWER CONTROL C.B.A. (VEPS00177A)



P704

1	AFT DEFEAT
2	TV/VCR

P705

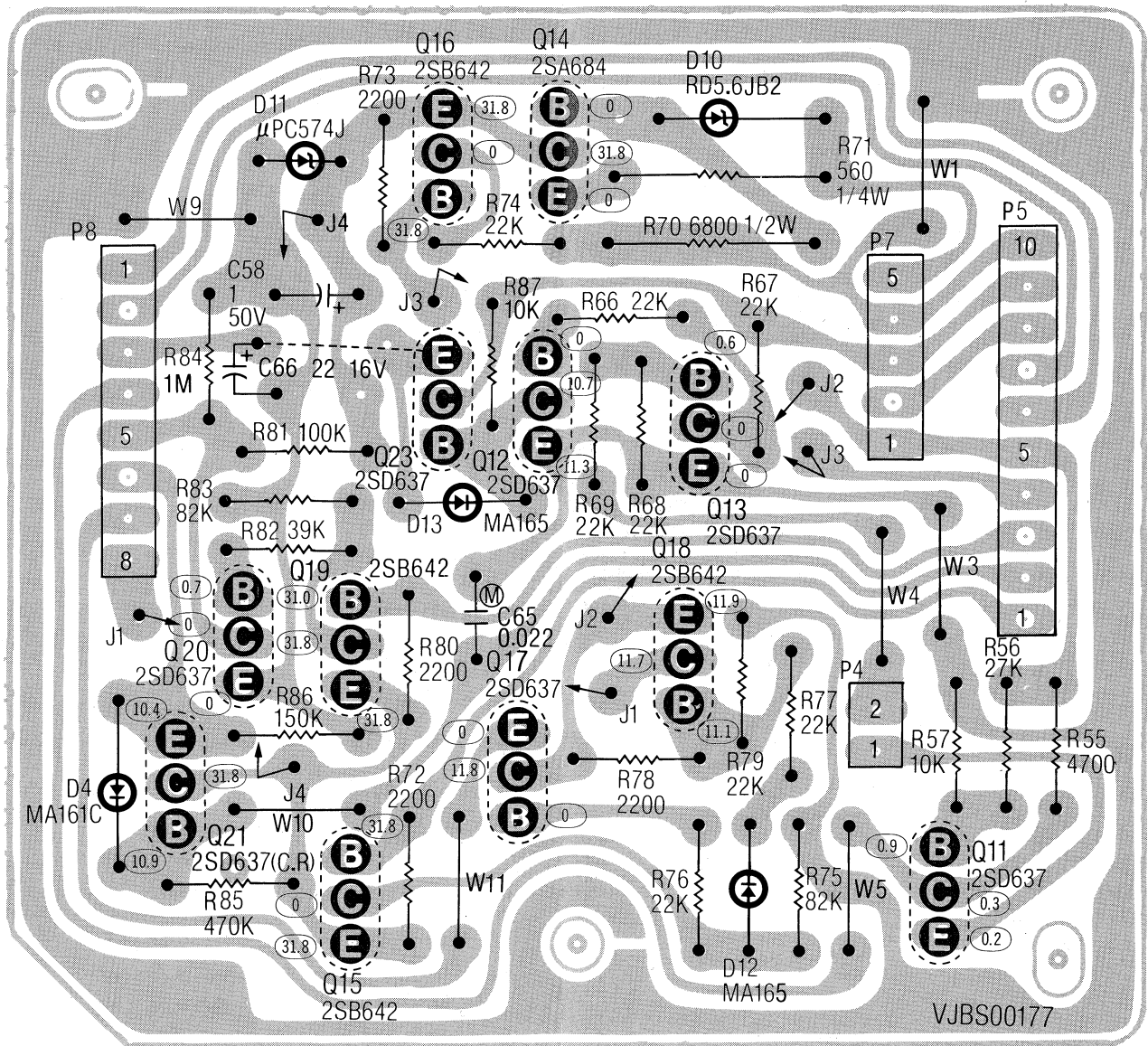
1	UHF
2	BT
3	VHF (H)
4	VHF (L)
5	+12V
6	CATV
7	AFT
8	+6V
9	+12V(I.R)
10	GND

P707

1	+12V
2	+6V
3	+12V(I.R)
4	GND
5	+45V

P708

1	CATV
2	AFT
3	TV/VCR
4	AFT DEFEAT
5	BS
6	BT
7	BU
8	BV



UNLESS OTHERWISE SPECIFIED,
TRANSISTOR RANKS ARE Q,R OR S.

REF. NO. 700 SERIES

	STOP		
	E	B	C
Q711	0.2	0.9	0.3
Q712	11.3	0	10.7
Q713	0	0.6	0
Q714	0	0	31.8
Q715	31.8	31.8	0
Q716	31.8	31.8	0
Q717	0	0	11.8
Q718	11.9	11.1	11.7
Q719	31.8	31.0	31.8
Q720	0	0.7	0
Q721	10.4	10.9	31.8

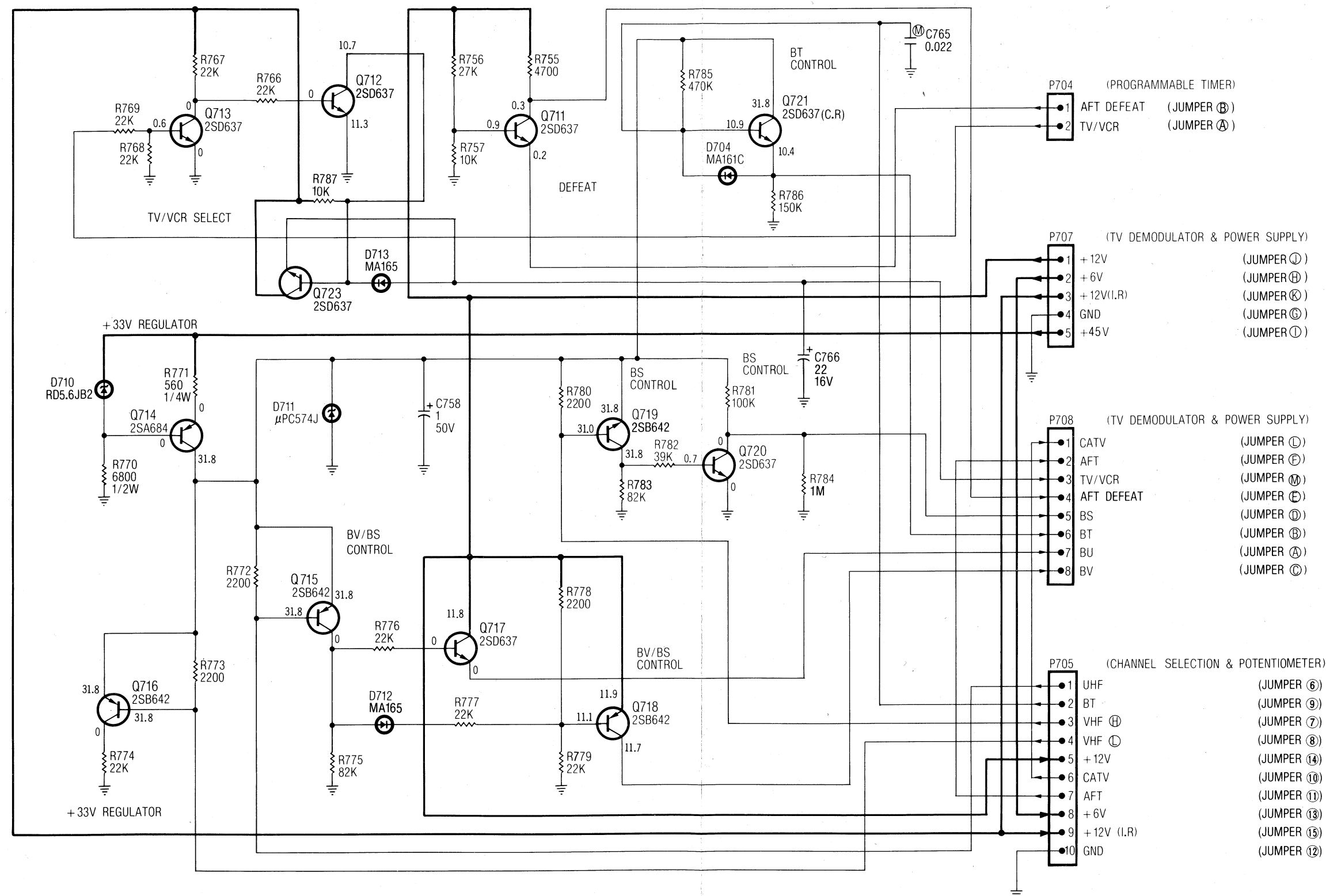
UHF/VHF Tuner Power Control C.B.A.	
Q11	A-3
Q12	B-2
Q13	B-2
Q14	B-2
Q15	A-2
Q16	B-2
Q17	A-2
Q18	A-2
Q19	A-2
Q20	A-2
Q21	A-2
Q23	B-2

UHF/VHF TUNER POWER CONTROL SCHEMATIC DIAGRAM

C

B

A



NOTE: REF. NO. ON C.B.A. IS PRINTED AS FOLLOWS.
EXAMPLE: C.B.A.---R2, REF. NO. 700 SERIES
SCHEMATIC DIAGRAM---R702
(R702 IS ABBREVIATED TO R2)

UNLESS OTHERWISE SPECIFIED,
TRANSISTOR RANKS ARE Q,R OR S.

CALLOUTS NEXT TO WIRING PLUGS
INDICATE CONNECTIONS TO OTHER
SCHEMATIC DIAGRAMS.

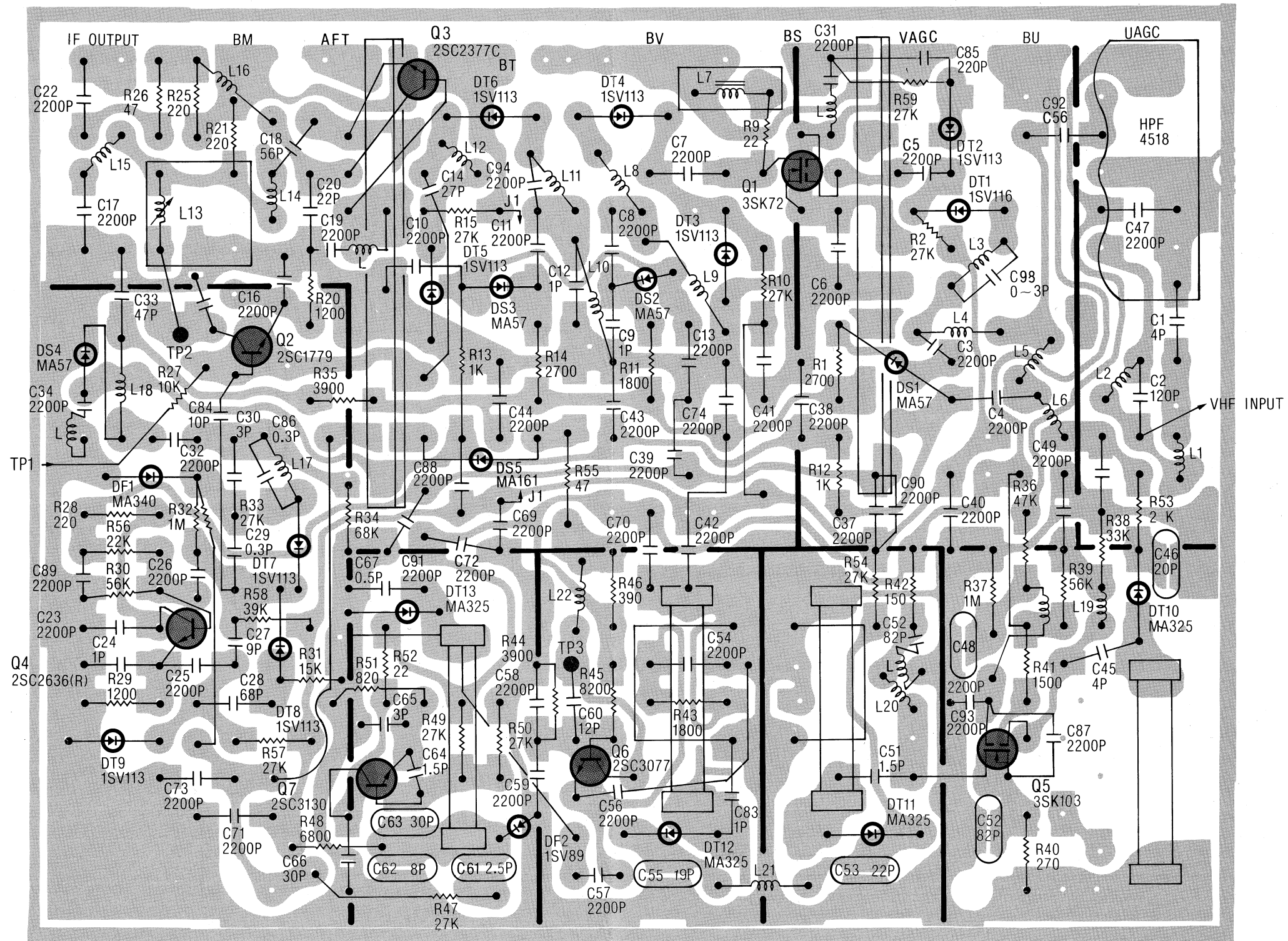
VJBS00177

UHF/VHF TUNER UNIT (TNV56751F2)

C

B

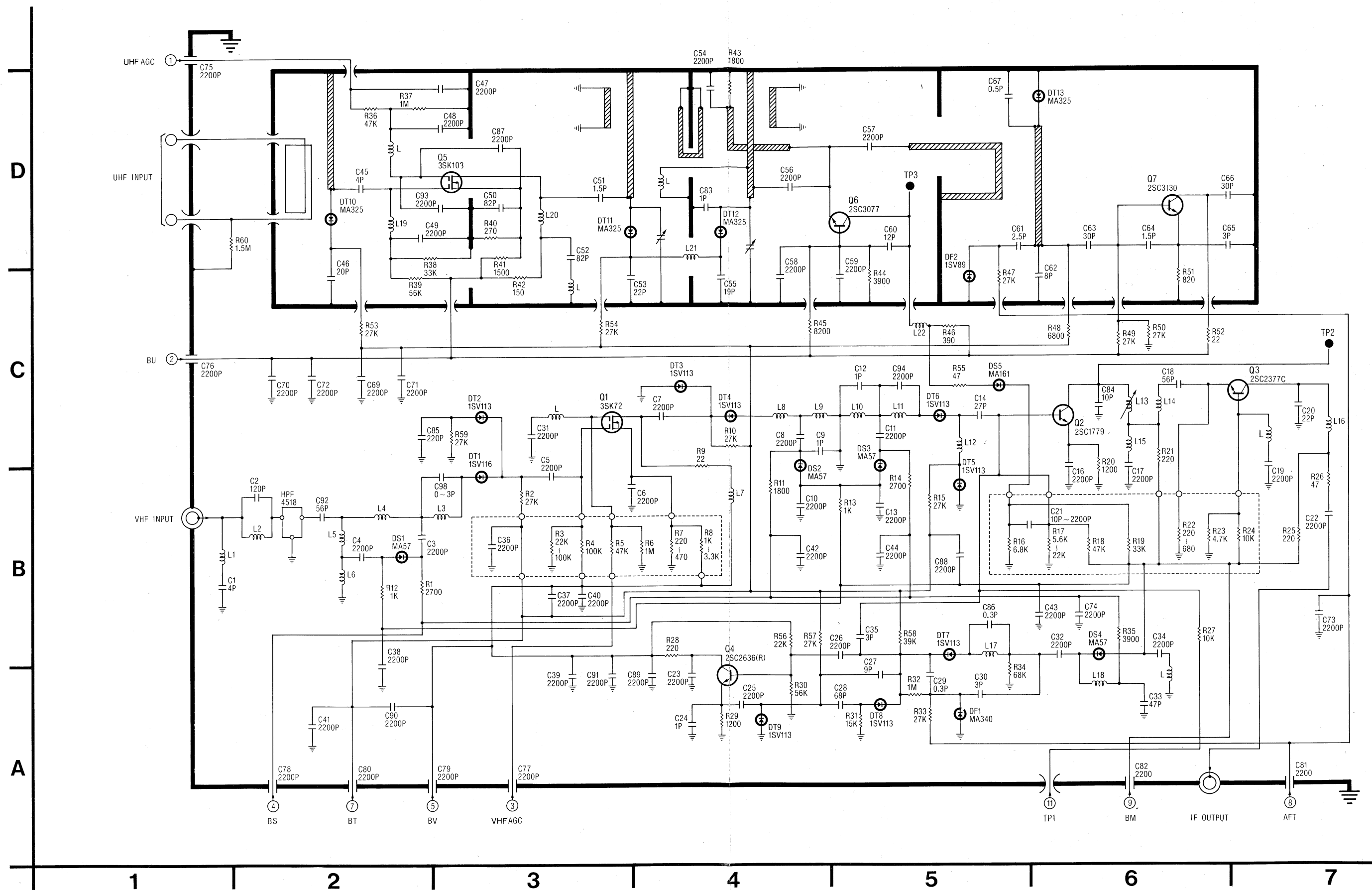
A



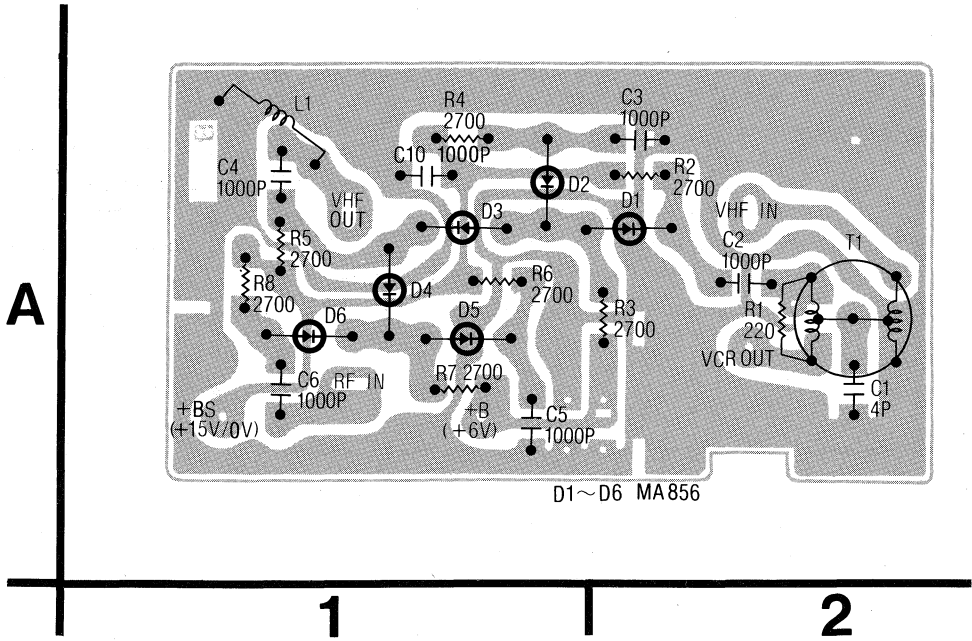
UHF/VHF Tuner Unit	
Q1	C-3
Q2	B-1
Q3	C-2
Q4	B-1
Q5	A-3
Q6	A-2
Q7	A-2

UHF/VHF TUNER SCHEMATIC DIAGRAM

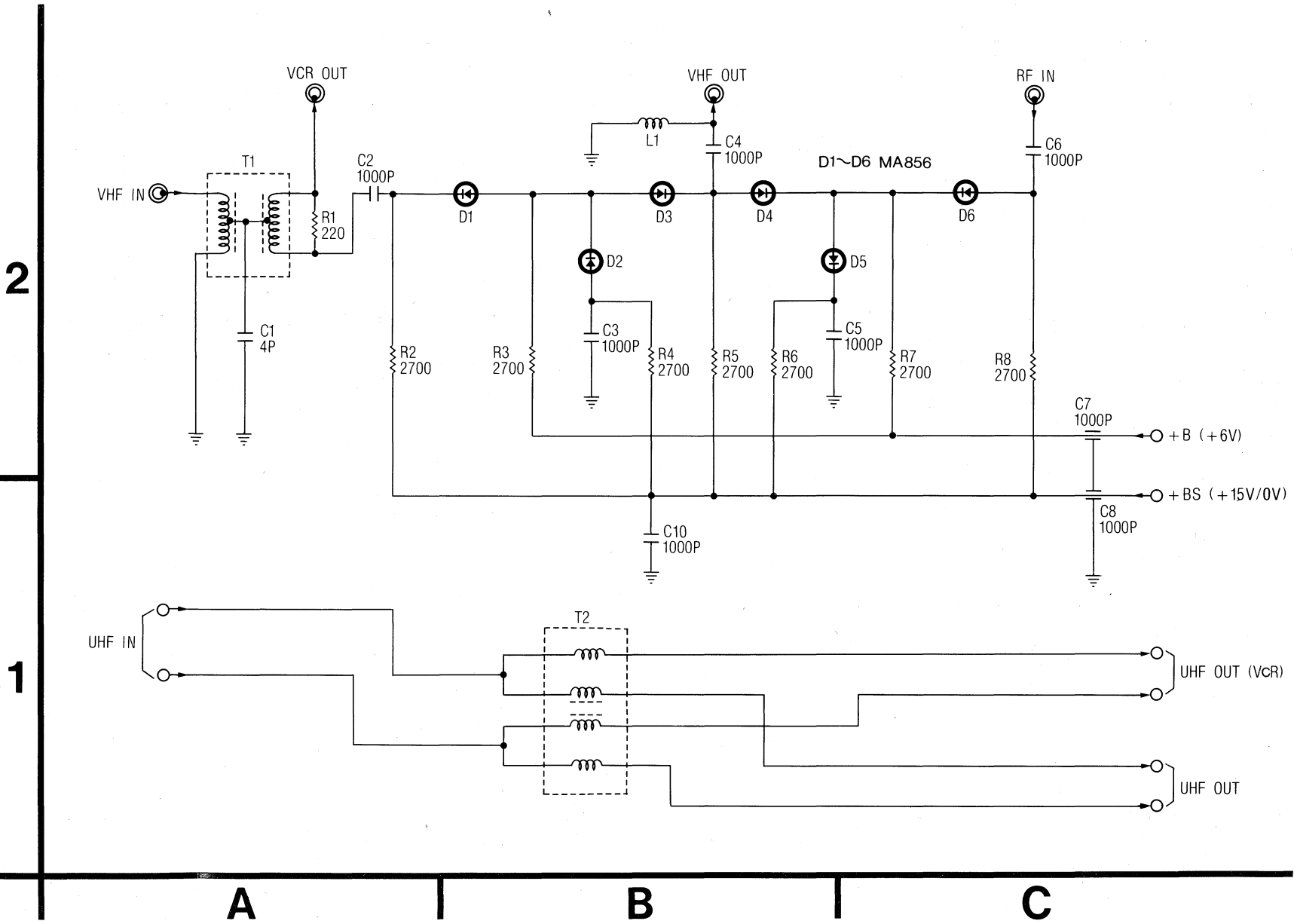
7-25
ANTENNA TERMINAL
SCHEMATIC DIAGRAM



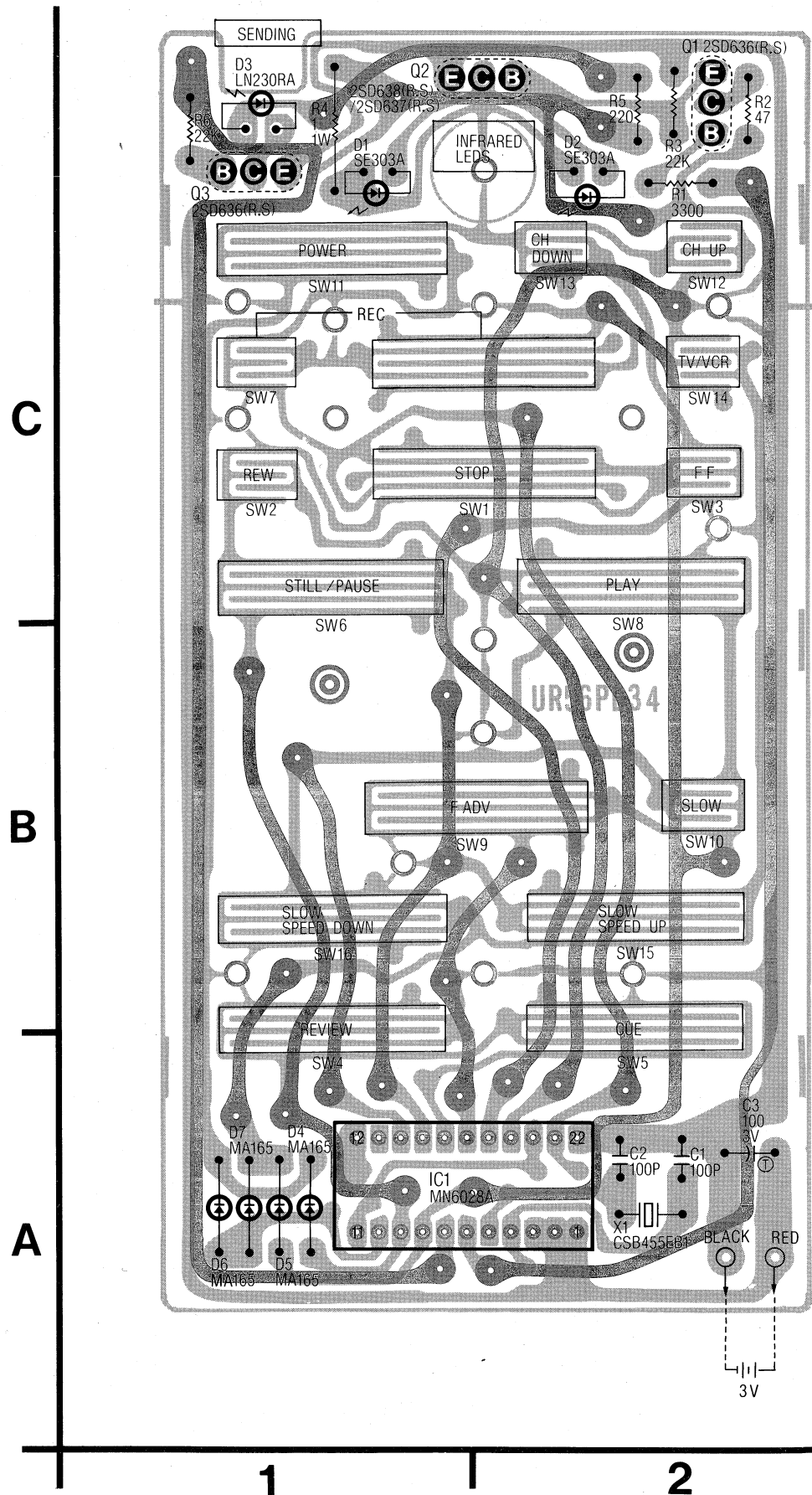
ANTENNA TERMINAL UNIT (ENPD613)



ANTENNA TERMINAL SCHEMATIC DIAGRAM

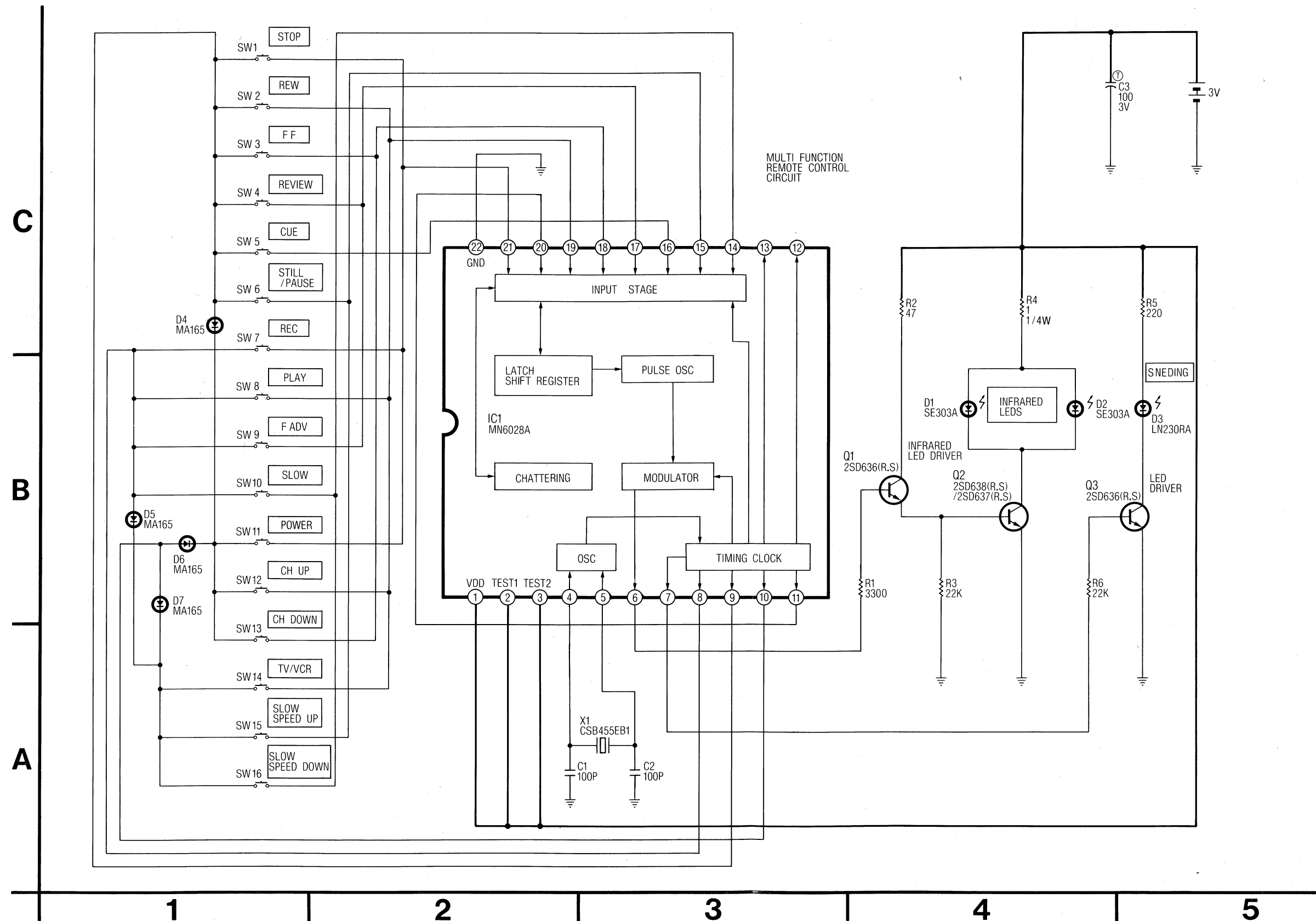


IR WIRELESS TRANSMITTER UNIT



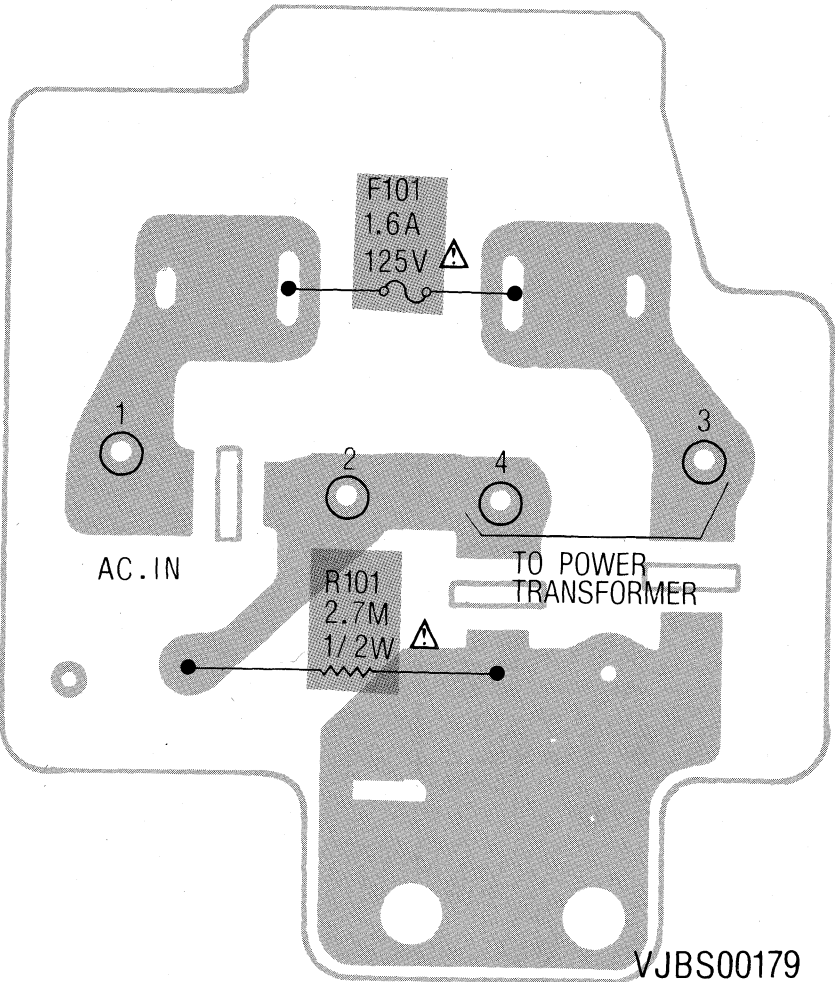
IR WIRELESS TRANSMITTER SCHEMATIC DIAGRAM

7-27
IR WIRELESS TRANSMITTER
SCHEMATIC DIAGRAM



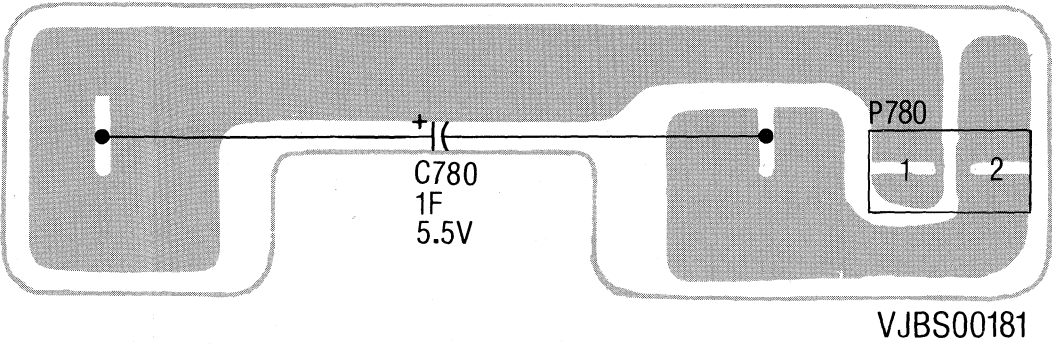
7-28
IR WIRELESS TRANSMITTER
C.B.A.

FUSE C.B.A. (VEPS00179A1)



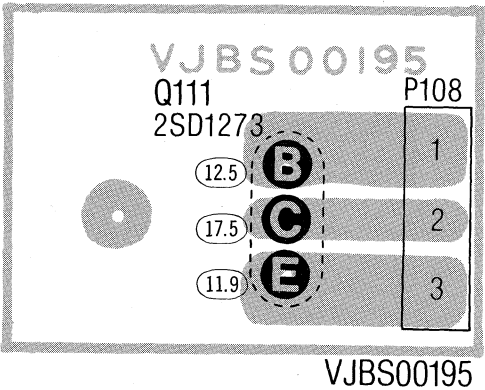
IMPORTANT SAFETY NOTICE
Components identified by shade Δ have special characteristics important for safety. When replacing any of these components, use only the original ones.

TIMER BACKUP CAPACITOR C.B.A. (VEPS00181A1)



P780	
1	BACK UP $\oplus$
2	GND

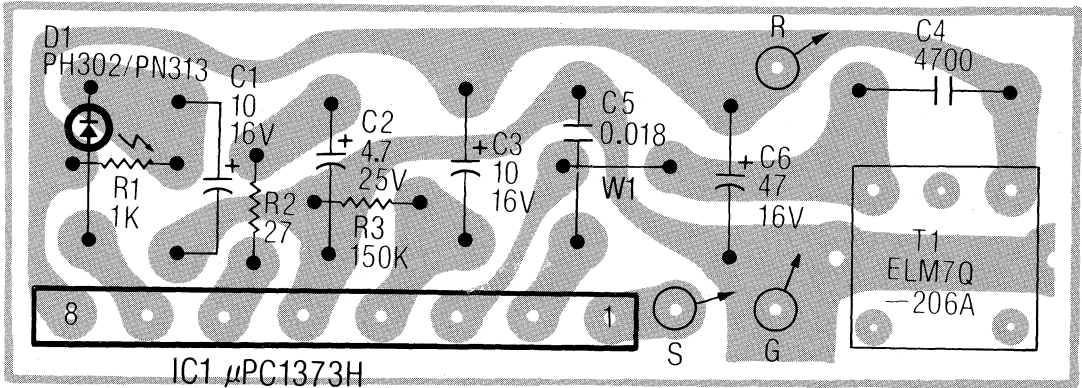
POWER TR C.B.A. (VEPS00195)



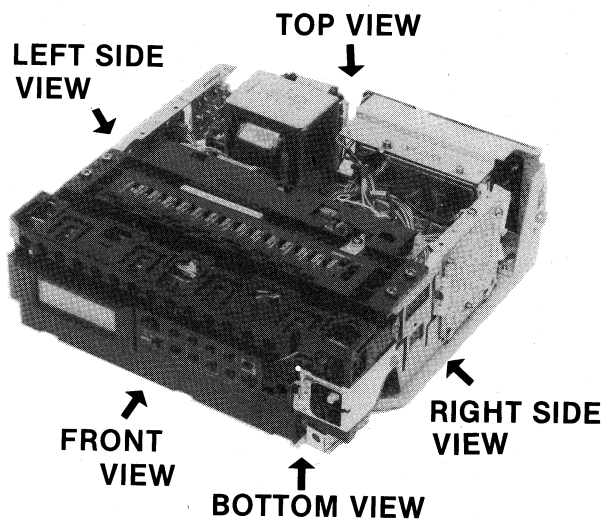
P108	
1	POWER TR E
2	POWER TR C
3	POWER TR B

	STOP		
	E	B	C
Q111	11.9	12.5	17.5

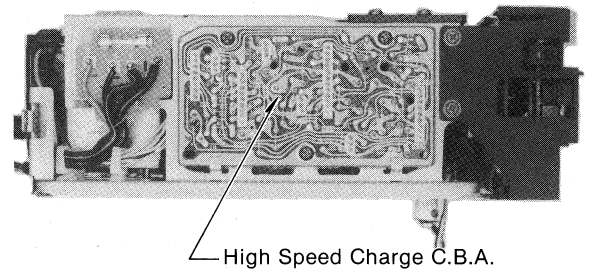
IR REMOTE RECEIVING DETECTOR UNIT (EUR3613)



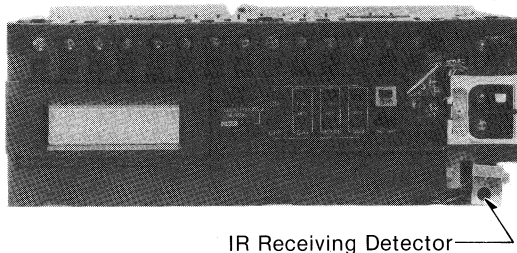
CIRCUIT BOARD LAYOUT



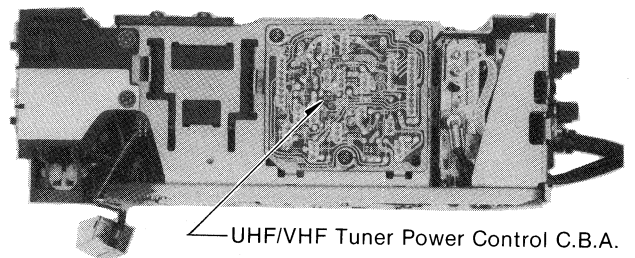
LEFT SIDE VIEW



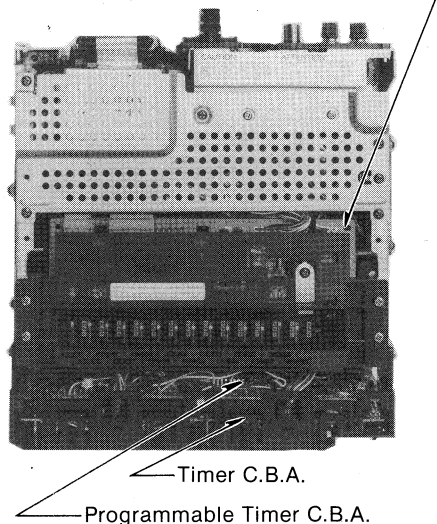
FRONT VIEW



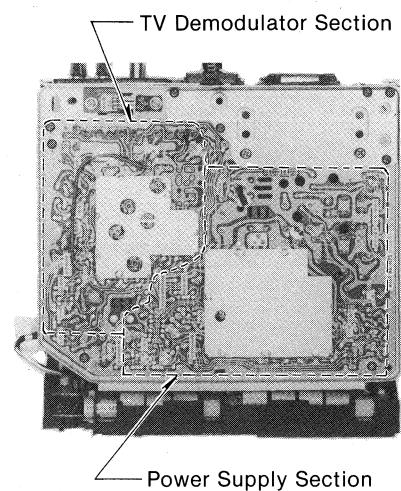
RIGHT SIDE VIEW



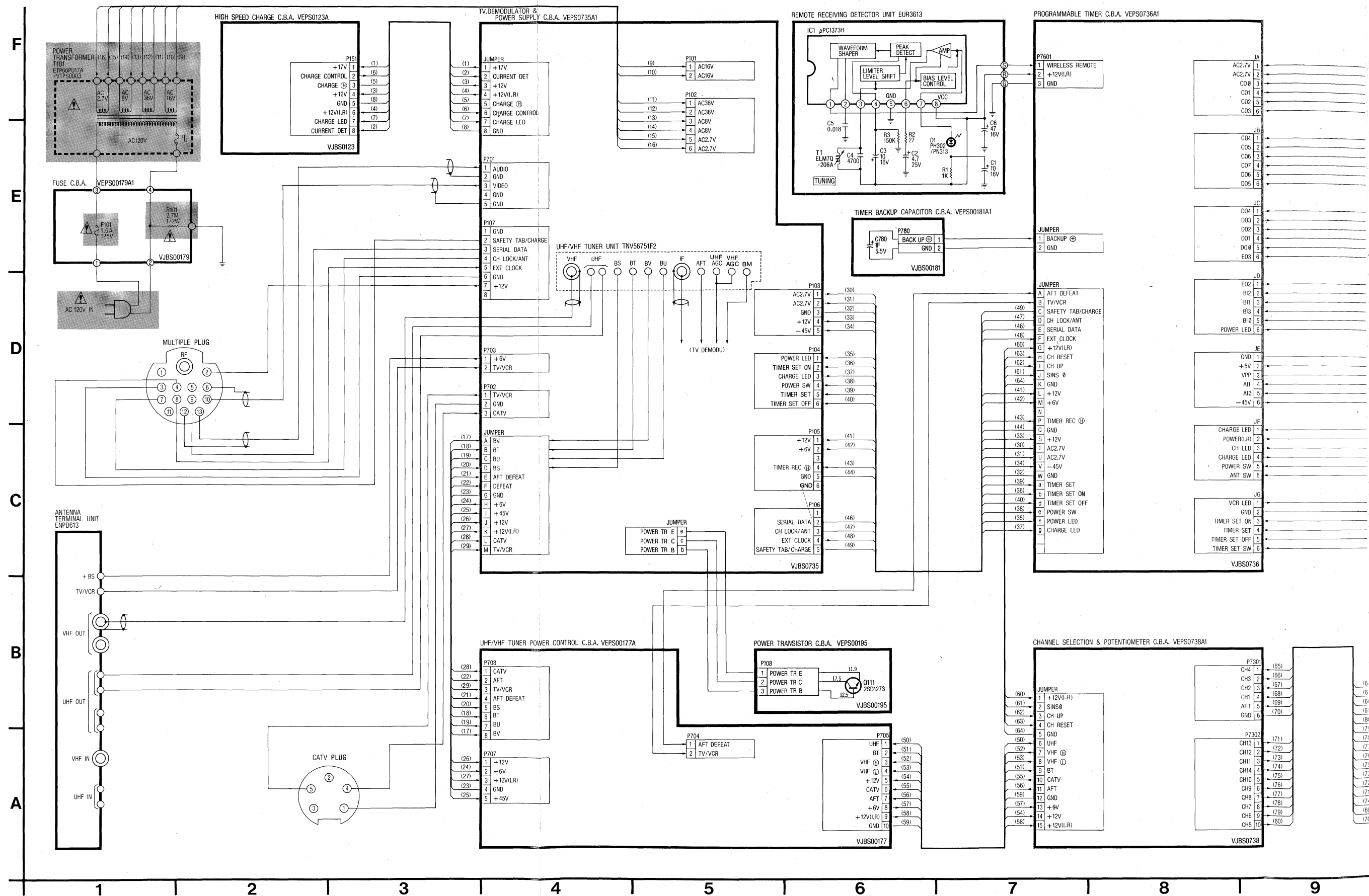
TOP VIEW CH Selection & Potentiometer C.B.A.

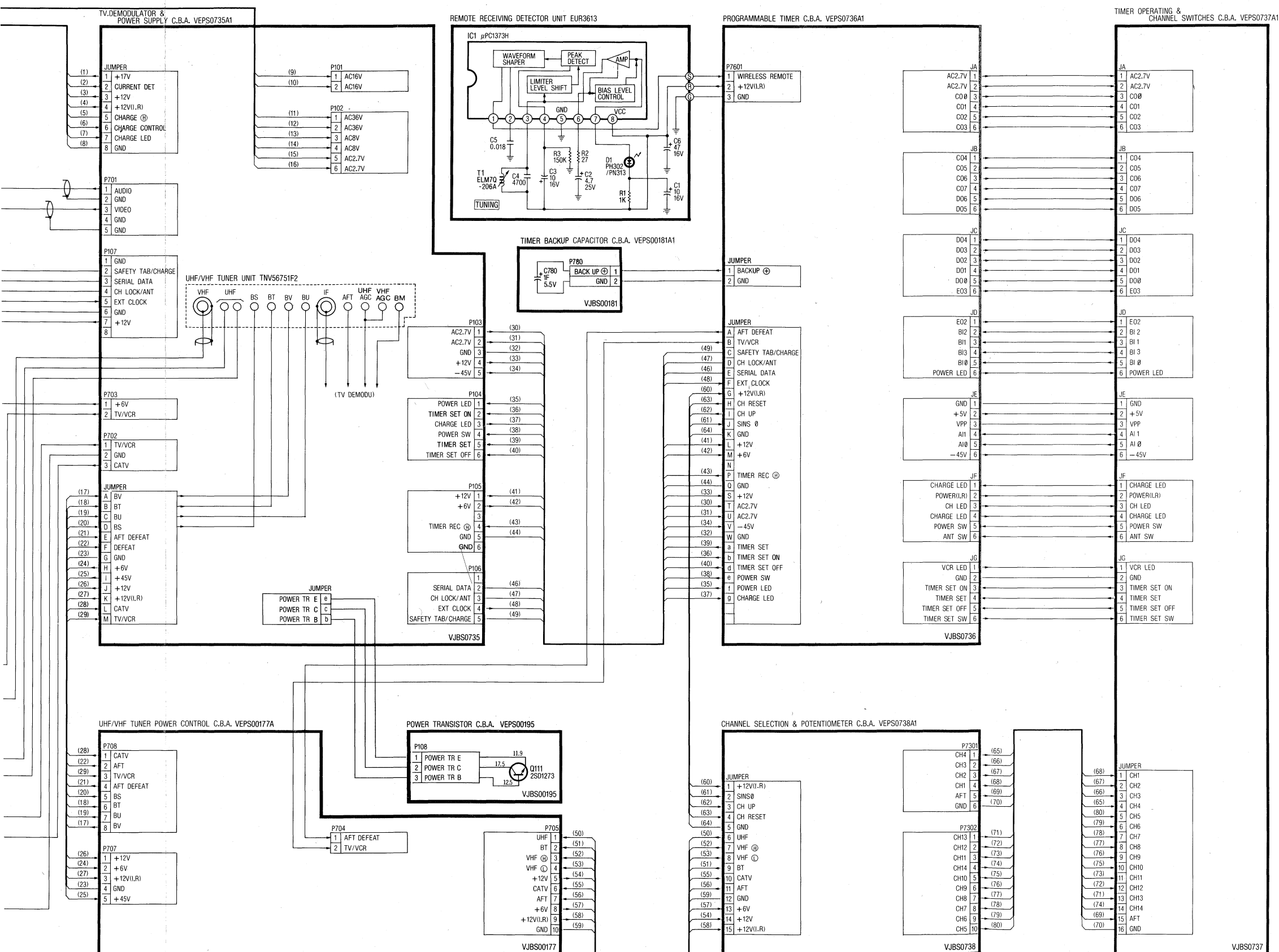


BOTTOM VIEW



INTERCONNECTION SCHEMATIC DIAGRAM





IMPORTANT SAFETY NOTICE
Components identified by shade  have special characteristics important for safety. When replacing any of these components, use only the original ones.

 Marked components are critical for safety. Replace only with same components as specified.

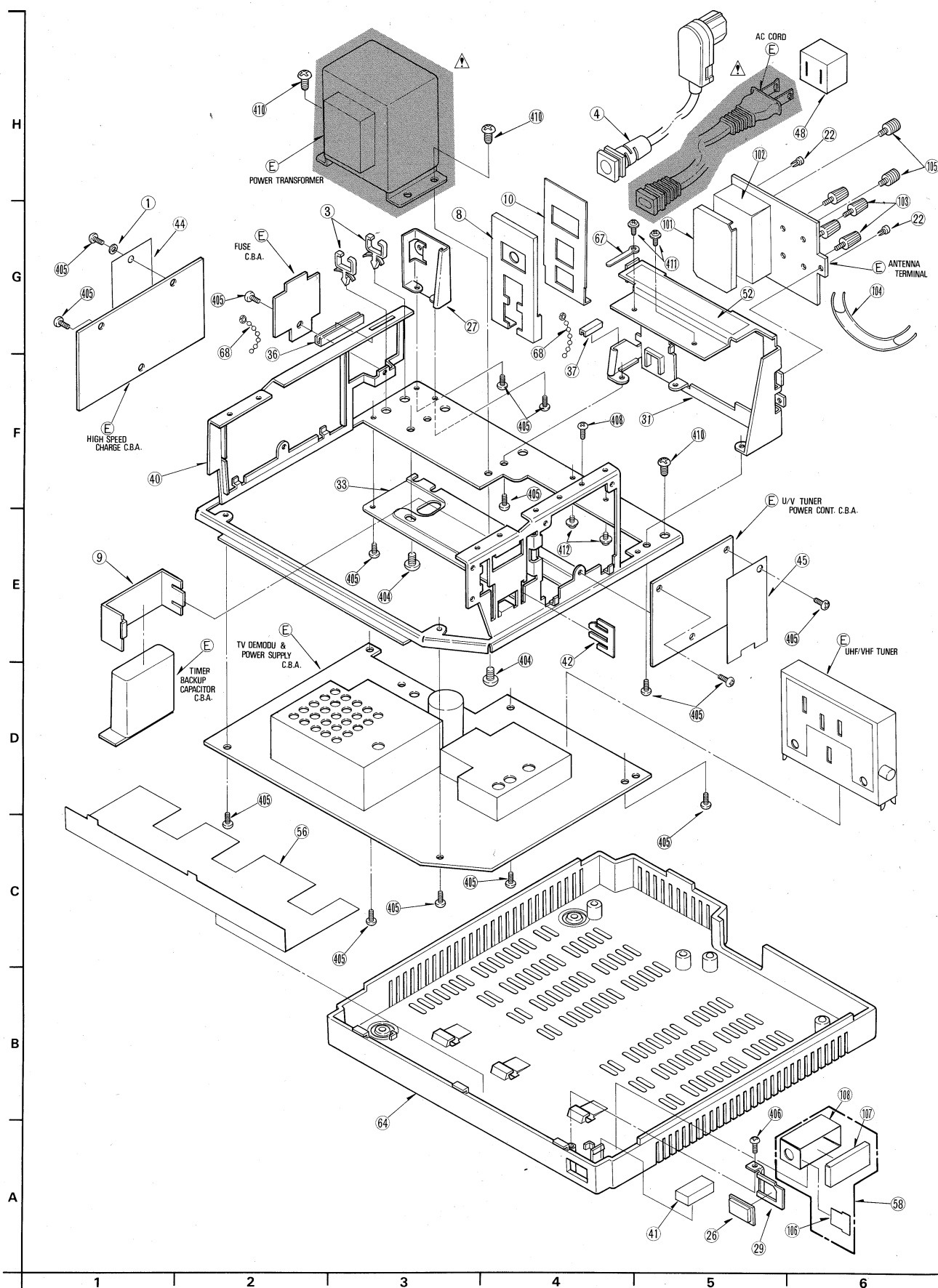
This exploded view diagram illustrates the assembly of a radio receiver chassis. The components are numbered 1 through 73, and their assembly sequence is indicated by letters A through I. The diagram shows the following parts and their assembly order:

- Chassis and Base:** The main chassis (1) is the base for all components. The base plate (2) is attached to the bottom of the chassis.
- Power Transformer and Rectifier:** The power transformer (3) is mounted on the chassis. The rectifier (4) is attached to the transformer.
- Resistors and Capacitors:** Various resistors (5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73) and capacitors (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73) are mounted on the chassis.
- Control Panel:** The control panel (61) is attached to the front of the chassis. It includes the volume knob (62), tuning knob (63), and various switches and indicators (64, 65, 66, 67, 68, 69, 70, 71, 72, 73).
- Speaker:** The speaker (64) is mounted on the bottom of the chassis.
- Antenna:** The antenna (65) is attached to the top of the chassis.

The assembly sequence is as follows:

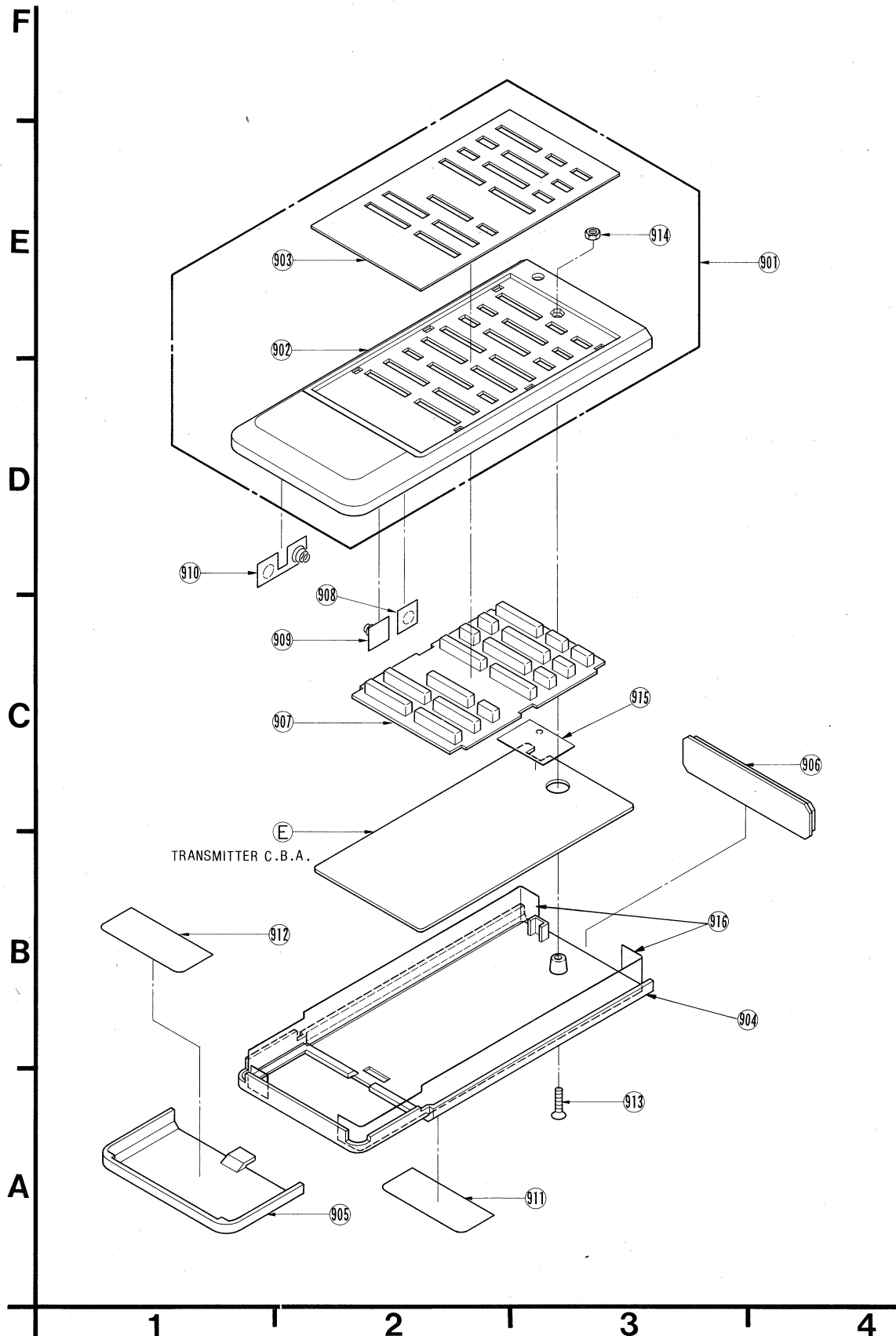
- Mount the power transformer (3) on the chassis (1).
- Attach the base plate (2) to the bottom of the chassis.
- Mount the rectifier (4) on the transformer.
- Mount the various resistors and capacitors (5 through 73) on the chassis.
- Mount the control panel (61) on the front of the chassis.
- Mount the speaker (64) on the bottom of the chassis.
- Mount the antenna (65) on the top of the chassis.

2 Programmable Timer/Tuner Section



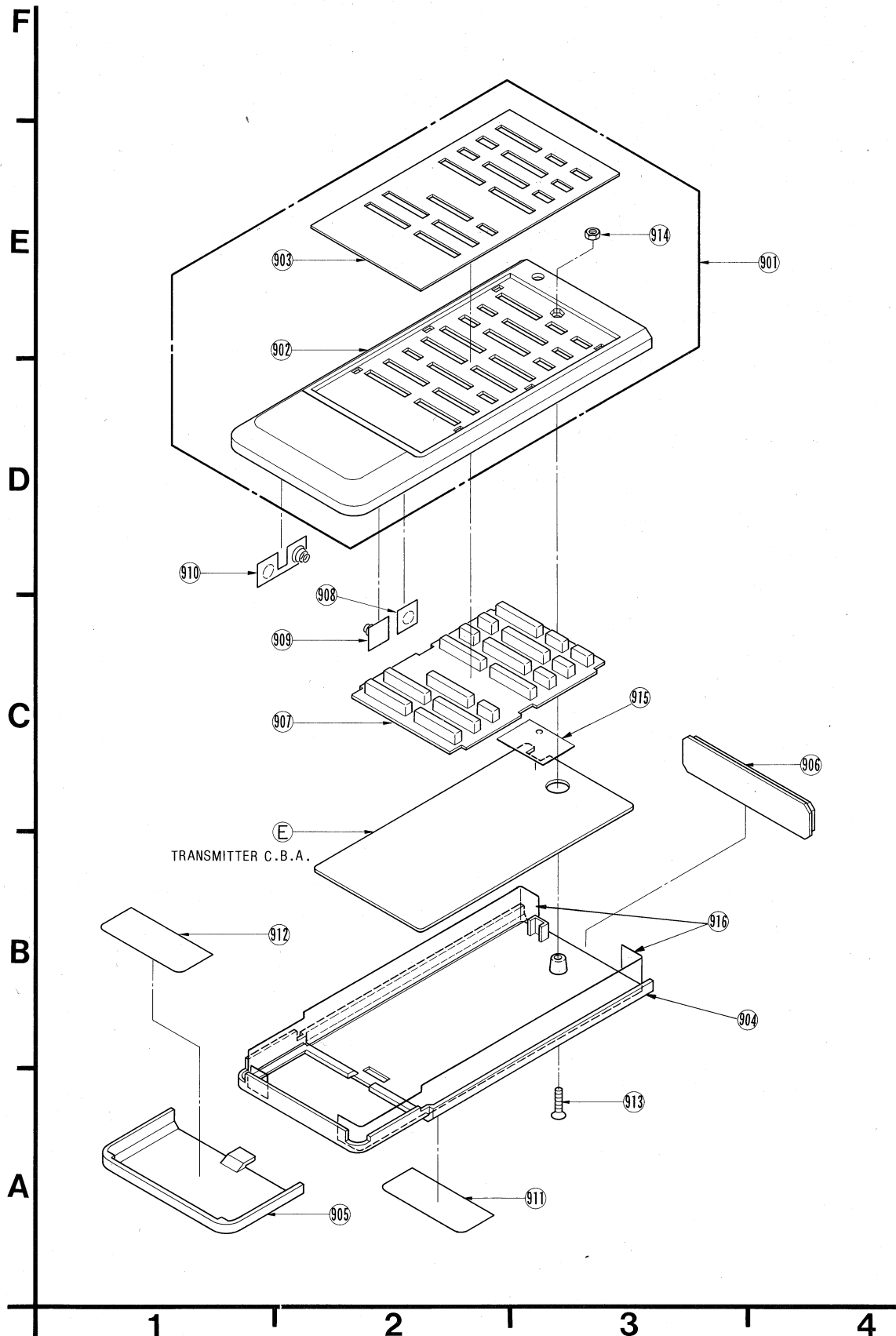
IMPORTANT SAFETY NOTICE

Components identified by shade  have special characteristics important for safety. When replacing any of these components, use only the original ones.

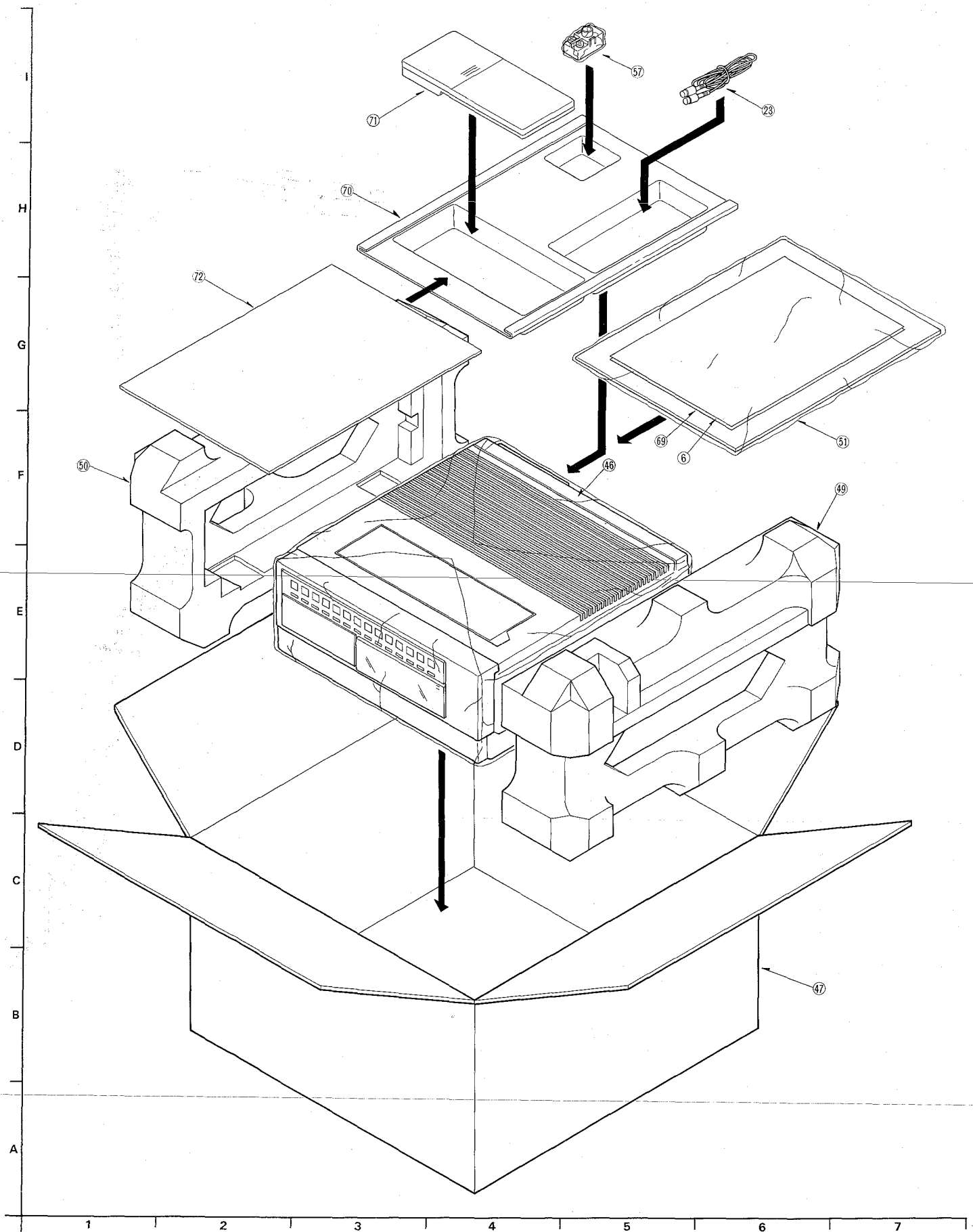
③ Transmitter Section

IMPORTANT SAFETY NOTICE

Components identified by shade  have special characteristics important for safety. When replacing any of these components, use only the original ones.

③ Transmitter Section

4 Packing Parts Section



MECHANICAL REPLACEMENT PARTS LIST

Model No. PV-A500

Note: *Be sure to make your orders of replacement parts according to this list.
Since all parts are available, availability column indicates no mark.

Item No.	Drawing No.	Description	Pcs/ Set	Availability	Part No.	Remark
1	2	WASHER	1		QKJK1073	
2	1	DOOR CLAMPER	2		TKK769906	
3	2	CLAMPER	2		TMM76437	
4	2	ADAPTOR CABLE	1		VECS0083	
5	1	IR SELECT SWITCH COVER	1		VGFS0023	
6	4	UHF CHANNEL FILM	1		VGKS0452	
7	1	VHF CHANNEL FILM	1		VGKS0453	
8	2	POWER CORD FIXING PIECE	1		VGMS0008	
9	2	TIMER BACKUP CAPACITOR	1		VGMS0011	
		C.B.A. ANGLE				
10	2	POWER CORD PLATE	1		VGNS0412	
11	1	TUNING V.R CASE DECORATION	1		VGNS0417	
12	1	FILM HOLDER	1		VGQS0159	
13	1	TUNING V.R KNOB (A)	7		VGTS0063	
14	1	TUNING V.R KNOB (B)	7		VGTS0064	
15	1	A.F.T SWITCH KNOB	1		VGTS0065	
16	1	POWER SWITCH BUTTON	1		VGUS0148	
17	1	TIMER & TV/VCR SELECT SW	2		VGUS0149	
		BUTTON				
18	1	CHANNEL BUTTON	14		VGUS0150	
19	1	TIMER OPERATION BUTTON1	10		VGUS0152	
20	1	SCREW	4		VHDS0012	
21	1	SCREW	4		VHDS0013	
22	2	PLASTIC RIVET	2		VHN0011	
23	4	TWIN LEAD CONNECTOR	1		VJA0102	
24	1	TUNING DOOR	1		VKFS0087	
25	1	TIMER DOOR	1		VKFS0088	
26	2	FILTER PLATE	1		VKWS0025	
27	2	TOP COVER ANGLE (L)	1		VMA0610	
28	1	BUTTON SUPPORT ANGLE	1		VMA0611	
29	2	FILTER PLATE ANGLE	1		VMA0613	
30	1	CHANNEL BUTTON STOPPER	1		VMA0614	
31	2	POWER CORD ANGLE	1		VMA0615	
32	1	CHASSIS SUPPORT PLATE	1		VMA0635	
33	2	CHASSIS SUPPORT PLATE (A)	1		VMA0666	
34	1	CHANNEL BUTTON GROUNDING	1		VMBS0133	
		SPRING				
35	1	RETURN SPRING	1		VMBS0202	
36	2	PLASTIC EDGE	1		VMES0006	
37	2	PLASTIC EDGE	1		VMES0013	
38	1	SWITCH COVER	2		VMF0195	
39	1	TUNING DOOR CUSHION	1		VMGS0019	
40	2	MAIN CHASSIS	1		VMKS0026	
41	2	CUSHION	1		VMIS0022	
42	2	TIMER BACKUP CAPACITOR	1		VMXS0104	
		HOLDER				
43	1	DISPLAY TUBE BARRIER	1		VMZS0063	
44	2	BOOSTING CHARGE C.B.A	1		VMZS0064	
		BARRIER				
45	2	TUNER P.B BARRIER	1		VMZS0065	
46	4	POLYETHYLENE BAG TUNER	1		VPFS0012	
47	4	PACKING CASE	2		VPGS0539	
48	2	PLUG COVER	1		VPN0428	
49	4	RIGHT CUSHION TUNER	1		VPNS0076	
50	4	LEFT CUSHION TUNER	1		VPNS0077	

Item No.	Drawing No.	Description	Pcs/ Set	Availability	Part No.	Remark
51	4	FAN BAG	1		VQFS0314	
52	2	FUSE CAUTION LABEL	1		VQLS0453	
53	1	CAUTION LABEL	1		VQLS0460	
54	1	SERVICE CAUTION LABEL	1		VQLS0473	
55	1	TUNER STICKER	1		VQLS0491	
56	2	BOTTOM SHIELD PLATE	1		VSCS0169	
57	4	VHF ANTENNA ADAPTOR	1		VSQS0057	
58	2	IR WIRELESS RECEIVING	1		VSQS0115	
		DETECTOR UNIT				
59	1	TUNING V.R CASE UNIT	1		VYBS0070	
60	1	FRONT BRACKET UNIT	1		VYBS0071	
61	1	FRONT PANEL 1 UNIT	1		VYPS1034	
62	1	TUNING DOOR UNIT	1		VYPS1037	
63	1	TOP CASE 1 UNIT	1		VYPS1039	
64	2	BOTTOM CASE 1 UNIT	1		VYPS1042	
65	1	FILM HOLDER UNIT	1		VYQS0018	
66	1	TIMER OPERATING KNOB	1		VGTS0067	
67	2	CLAMPER	1		VJR3	
68	2	FASTENER	2		WZBV1	
69	4	CATV CHANNEL FILM	1		VCKS0454	
70	4	ACCESSORY CASE T	1		VPNS0082	
71	4	WIRELESS REMOTE CONTROL	1		VSQS0114	
72	4	ACCESSORY CASE PAD	1		VPQS0518	
73	1	TUNING CAUTION LABEL	1		VQLS0419	
101	2	SHIELD COVER	1		CVS85AD03TW	
102	2	VHF BOX UNIT	1		ENCCVSA046D	
103	2	ANTENNA TERMINAL ASS'Y	1		ENCCSPA022D	
104	2	BALLOON CORD	1		ENCTRBA006D	
105	2	PIN JACK ASS'Y	1		ENCKKPA125D	
106	2	FILTER PLATE	1		UR36FT28	
107	2	SHIELD CASE (TOP)	1		UR36SC17	
108	2	SHIELD CASE (BOTTOM)	1		UR36SC18	

ELECTRICAL REPLACEMENT PARTS LIST

Model No. PV-A500

Note:

1. Be sure to make your orders of replacement parts according to this list.

2. IMPORTANT SAFETY NOTICE

Components identified by shade have special characteristics important for safety. When replacing any of these components, use only the original ones.

3. Unless otherwise specified:

All resistors are in OHMS (Ω), 1/8W, $\pm 5\%$ carbon, K=1,000 Ω , M=1,000K Ω .

All capacitors are in MICROFARADS (μ F), $\pm 10\%$ P= μ F.

All coils are in MICROHENRIES (μ H), m=10³ μ .

4. C.B.A.: Circuit Board Assembly.

5. C.B.: Circuit Board.

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
	VEPS0735A1	TV DEMODULATOR & POWER SUPPLY C.B.A.	1	
	VEPS00177A	UHF/VHF TUNER POWER CONTROL C.B.A.	1	
	VEPS0738A1	CHANNEL SELECTION & POTENTIOMETER C.B.A.	1	
	VEFS0736A1	PROGRAMMABLE TIMER C.B.A.	1	
	VEPS0737A1	TIMER OPERATING & CHANNEL SWITCHES C.B.A.	1	
	VEPS0123A	HIGH SPEED CHARGE C.B.A.	1	
	VEPS00179A1	FUSE C.B.A.	1	
	VEPS00181A1	TIMER BACKUP CAPACITOR C.B.A.	1	
	VEFS00195	POWER TRANSISTOR C.B.A.	1	
	UR36VPB7	IR RECEIVING DETECTOR C.B.A.		
	UR56VPB14	IR TRANSMITTER C.B.A.	1	
		TV Demodulator & Power Supply C.B.A.		
		Power Supply Section		
		Integrated Circuits		
IC101	VCRS0010		1	
IC102	AN7806 or HA17806P		1	
		Transistors		
Q101	2SD888		1	
Q102	2SA720(Q,R,S)		1	
Q103	2SD636(Q,R,S)		1	
Q105	2SD1205		1	
Q106,107	2SD637(Q,R,S)		2	
Q108	2SD946		1	
Q109	2SC1318A(Q,R,S)		1	
Q110	2SD637(Q,R,S)		1	
Q112	2SA777(Q,R,S)		1	
		Diodes		
D101	RD502		1	
D102	MI-152A		1	
D103	MI-152RA		1	
D104	MI-152A		1	
D105,106	EM1Z		2	
D107	ERC81-004L7		1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
D108	RD3.6EL1 or RD3.6EL2	Zener	1	
D109,110	RD5.1JB1 or RD5.1JB2	Zener	2	
D111-113	MA165 or 1SS119		3	
D115,116	MA165 or 1SS119		2	
D118	RD13EB2 or RD13EB3	Zener	1	
D119	MA162		1	
D120	MA165 or 1SS119		1	
D121	RD13EB2 or RD13EB3	Zener	1	
D122-124	MA165 or 1SS119		3	
D125-128	MA161		4	
D129-132	MA165 or 1SS119		4	
D133	RD8.2EB	Zener	1	
D134	MA161		1	
D135	MA150		1	
		Resistors		
R102	ERD25FJ331	1/4W 330	1	
R103	ERD25FJ330	1/4W 33	1	
R104	ERD25FJ100	1/4W 10	1	
R105	ERD10TJ684	680K	1	
R106	ERD10TJ222	2.2K	1	
R107	FRP3AKR39	Wirewound Flame Proof		
		3W 0.39	1	
R108,109	ERD25FJ331	1/4W 330	2	
R110	ERD10TJ471	470	1	
R111	ERD10TJ333	33K	1	
R112	ERD10TJ563	56K	1	
R113	ERD10TJ392	3.9K	1	
R114	EVN38CA00B14	Variable	10K	1
R115	ERD10TJ153		15K	1
R116	ERD10TJ103		10K	1
R117	ERD10TJ153		15K	1
R118	ERD10TJ683		68K	1
R119	ERD10TJ333		33K	1
R120	ERD10TJ683		68K	1
R121	ERG1ANJ102H	Metal Oxide	1W 1K	1
R122	ERD10TJ153		15K	1
R123	ERD25FJ100	1/4W 10	1	
R124	ERD25FJ331	1/4W 330	1	
R125	ERD25TJ103	1/4W 10K	1	
R126,127	ERD10TJ562		5.6K	2
R130	ERD10TJ332		3.3K	1
R131-134	ERD10TJ473		47K	4
R135	ERD10TJ332		3.3K	1
R136	ERD10TJ222		2.2K	1
R137	ERD25FJ101	1/4W 100	1	
R138	ERD10TJ223		22K	1
R139,140	ERD10TJ153		15K	2
R141	ERDS2TJ332	1/4W 3.3K	1	
R142	ERD10TJ681		680	1
R143	ERG2ANJ180H	Metal Oxide	2W 18	1
R144	ERD10TJ333		33K	1
R145	ERD10TJ473		47K	1
R146,147	ERD10TJ333		33K	2
R148	ERD25TJ153	1/4W 15K	1	
R149	ERD10TJ182		1.8K	1

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks	Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
R150	ERD10TJ333	33K	1				TV Demodulator Section		
R182	ERD25TJ821	1/4W 820	1						
R190	ERD25TJ821	1/4W 820	1						
							Integrated Circuits		
					IC701	AN5215		1	
					IC702	BN5115		1	
							Transistors		
C101,102	ECKW1H103ZF5	Ceramic 50V 0.01	2		Q701	2SD637(Q,R,S)		1	
C103	ECETS1V472U	Electrolytic 35V 4700	1		Q702	2SB642(Q,R)		1	
C104	ECEA1HS2R2	Electrolytic 50V 2.2	1		Q703,704	2SD637(Q,R,S)		2	
C105	ECEA1VF331	Electrolytic 35V 330	1		Q710	2SD637(Q,R,S)		1	
C106	ECKW1H222ZF5	Ceramic 50V 0.0022	1						
C107	ECEA2SZ470	Electrolytic 25V 47	1						
C108	ECEA2SZ330	Electrolytic 25V 33	1				Diodes		
C109	ECEA0JS470	Electrolytic 6.3V 47	1		D701-703	MA165 or		3	
C110	ECKW1H472ZF5	Ceramic 50V 0.0047	1			1SS119			
C111	ECQM1H102KZ	Polyester 50V 0.001	1		D714	MA150		1	
C112	ECEA0JS470	Electrolytic 6.3V 47	1		D715	RD15EB	Zener	1	
C113	ECQM1H222JZ	Polyester 50V 0.0022	1		D716	RD8.2EB	Zener	1	
C114	ECEA1CS101	Electrolytic 16V 100	1		D717	RD15EB	Zener	1	
C115	ECKW1H103ZF5	Ceramic 50V 0.01	1		D718	BQA02-14B or	Zener	1	
C116	ECEA1VS102	Electrolytic 35V 1000	1			RD15EB			
C117	ECEA5OZR33	Electrolytic 50V 0.33	1						
C118	ECEA1HS010	Electrolytic 50V 1	1						
C120	ECEA1 VS330	Electrolytic 35V 33	1				Resistors		
C121-124	ECEA1HS010	Electrolytic 50V 1	4		R702	ERD10TJ333	33K	1	
C125	ECEA1VS220	Electrolytic 35V 22	1		R703	ERD25FJ220	1/4W 22	1	
C126	ECEA1VS470	Electrolytic 35V 47	1		R704	EVN38CA00B14	Variable 10K	1	
C127	ECEA1CS101	Electrolytic 16V 100	1		R705,706	ERD10TJ103	10K	2	
C128	ECKW2H103PE8	Ceramic 500V 0.01	1		R707	ERD25TJ225	1/4W 2.2M	1	
C129	ECEA1JS471	Electrolytic 63V 470	1		R708	ERD10TJ472	4.7K	1	
C130	ECEA1JS331	Electrolytic 63V 330	1		R709	ERD10TJ470	47	1	
C131,132	ECKW1H103ZF5	Ceramic 50V 0.01	2		R710	EVN38CA00B14	Variable 10K	1	
C133	ECEA1CS102	Electrolytic 16V 1000	1		R711	ERD10TJ102	1K	1	
C134	ECEA1AS101	Electrolytic 10V 100	1		R712	ERD10TJ821	820	1	
C135	ECKW1H102KB5	Ceramic 50V 0.001	1		R713	ERD10TJ272	2.7K	1	
C136	ECCW1H470JC5	Ceramic 50V 47P	1		R714	ERD10TJ680	68	1	
C137,138	ECEA1HK010	Electrolytic 50V 1	2		R715	ERD25TJ680	1/4W 68	1	
C139	ECQV05104JZ	Polyester 50V 0.1	1		R716	ERD10TJ330	33	1	
C140	ECKW1H103ZF5	Ceramic 50V 0.01	1		R717	ERD25TJ101	1/4W 100	1	
C141	ECEA1HS010	Electrolytic 50V 1	1		R718	ERD10TJ562	5.6K	1	
					R719	ERD10TJ183	18K	1	
					R720	ERD10TJ561	560	1	
					R721	ERD10TJ272	2.7K	1	
					R722	ERD10TJ154	150K	1	
					R723,724	ERD10TJ102	1K	2	
					R725	ERD10TJ391	390	1	
					R726	ERD10TJ333	33K	1	
					R727	ERD10TJ274	270K	1	
					R728	ERD10TJ563	56K	1	
					R729	ERD10TJ392	3.9K	1	
					R730	ERD10TJ102	1K	1	
					R731	ERD10TJ183	18K	1	
					R732	ERD10TJ682	6.8K	1	
					R733	EVN38CA00B23	Variable 2K	1	
					R734	ERD10TJ332	3.3K	1	
					R735	ERD10TJ124	120K	1	
					R736	ERD10TJ221	220	1	
					R758,759	ERD10TJ472	4.7K	2	
					R760	ERD10TJ103	10K	1	
					R761	ERD10TJ682	6.8K	1	
					R762	ERD10TJ152	1.5K	1	
					R763	ERD10TJ683	68K	1	
					R764	ERD10TJ222	2.2K	1	
					R788	ERD25TJ154	1/4W 150K	1	
					R789	ERD25TJ100	1/4W 10	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks	Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
D7613-7621	MA165 or 1SS119		9		R7683	ERD25TJ102	1/4W 1K	1	
D7623	MA165 or 1SS119		1				Capacitors		
D7624	RD8.2JB	Zener	1		C7601	ECQM1H104KV or ECQM1H104KZ	Ceramic 50V 0.01	1	
D7625	MA165 or 1SS119		1		C7602	ECEA1AS470	Electrolytic 10V 47	1	
D7626	MA150		1		C7603	ECKF1H103ZF	Ceramic 50V 0.01	1	
					C7604	ECEA1AS101	Electrolytic 10V 100	1	
		Resistors			C7605	ECCW1H080DC5	Ceramic 50V 8P	1	
RX7601	EXBP85473K	Complex Compo.	47K 1		C7606	ECCW1H220JCS	Ceramic 50V 22P	1	
R7601	ERD10TJ103		10K 1		C7607	ECCW1H330JCS	Ceramic 50V 33P	1	
R7602	ERD10TJ562		5.6K 1		C7608	ECEA1HS010	Electrolytic 50V 1	1	
R7603-7607	ERD10TJ103		10K 5		C7609,7610	ECCW1H330JCS	Ceramic 50V 33P	2	
R7608	ERD10TJ562		5.6K 1		C7611,7612	EQQ-P1222JZ	Polyester 100V 0.0022	2	
R7609,7610	ERD10TJ104		100K 2		C7613	ECV1ZW20X32	Trimmer 20P	1	
R7611	ERD10TJ103		10K 1		C7614	ECKW1H103ZF5	Ceramic 50V 0.01	1	
R7612	ERD10TJ473		47K 1		C7615	ECEA1ES4R7	Electrolytic 25V 4.7	1	
R7613	ERD10TJ562		5.6K 1		C7616	ECKW1H103ZF5	Ceramic 50V 0.01	1	
R7614	ERD10TJ333		33K 1		C7617	ECEA1CS100	Electrolytic 16V 10	1	
R7615,7616	ERD10TJ104		100K 2		C7618,7619	ECCW1H220JCS	Ceramic 50V 22P	1	
R7617	ERD10TJ153		15K 1		C7620	ECKW1H103ZF5	Ceramic 50V 0.01	1	
R7618,7619	ERD10TJ104		100K 2		C7621	ECEA1CS100	Electrolytic 16V 10	1	
R7620	ERD10TJ333		33K 1				Crystal Oscillators		
R7621,7622	ERD10TJ103		10K 2		X7601	VSX0082		1	
R7623-7625	ERD10TJ223		22K 3		X7602	VSX0071		1	
R7627	ERD10TJ223		22K 1		X7603	VSX0094		1	
R7628	ERD10TJ332		3.3K 1						
R7629	ERD10TJ473		47K 1						
R7630	ERD10TJ222		2.2K 1		P7601	VJPS1142	Pin Header 3P	1	
R7631	ERD10TJ104		100K 1				Miscellaneous		
R7632	ERD10TJ103		10K 1			KL02	Spacer	1	
R7635	ERD10TJ104		100K 1				Timer Operating & Channel		
R7636	ERD10TJ224		220K 1				Switches C.B.A.		
R7637,7638	ERD10TJ104		100K 2				Integrated Circuit		
R7639	ERD10TJ473		47K 1		IC7501	AN6873		1	
R7641	ERD10TJ154		150K 1				Transistors		
R7642	ERD10TJ564		560K 1						
R7643	EVN38CA00B25	Variable	200K 1						
R7644,7645	ERD10TJ104		100K 2						
R7646	ERD10TJ473		47K 1						
R7647	ERD10TJ102		1K 1						
R7648	ERD10TJ332		3.3K 1						
R7649	ERD10TJ103		10K 1						
R7650	EVN38CA00B53	Variable	5K 1						
R7651	ERD10TJ473		47K 1						
R7652	ERD10TJ102		1K 1						
R7653	ERD10TJ473		47K 1						
R7654	ERD10TG3302 or ERO10TKG3302	Precision Metal Film	33K 1						
R7656	ERD10TJ102		1K 1						
R7657	ERD10TJ223		22K 1						
R7658	ERD10TJ563		56K 1						
R7659,7660	ERD10TJ104		100K 2						
R7663	ERD10TJ472		4.7K 1						
R7665	ERD10TJ102		1K 1						
R7667	ERD10TG2702 or ERO10TKG2702	Precision Metal Film	27K 1						
R7670	ERD10TJ223		22K 1						
R7671	ERD10TJ104		100K 1						
R7672	ERD10TJ103		10K 1						
R7673	ERD10TJ104		100K 1						
R7676	ERD50FJ471		1/2W 470						
R7677	ERD10TJ473		47K 1						
R7678	ERD10TJ104		100K 1						
R7679	ERD10TJ102		1K 1						
R7680	ERD10TJ224		220K 1						
R7681	ERC14GJ126	Solid	1/4W 12M	1					
R7682	ERD25TJ273		1/4W 27K	1					

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Fuse C.B.A.		
		Resistor		
R101	ERC12ZGK275	Solid 1/2W 2.7K	1	
		Fuse		
F101	XBA1C16NU100	1.6A	1	
		Miscellaneous		
	TJC6320	Fuse Holder	2	
	VJBS00179	Fuse P.C.B.	1	
		Timer Backup Capacitor C.B.A.		
		Capacitor		
C780	EECW5R5D105	Gold Capacitor 5.5V	1 1	
		Pin Header		
P780	VJPS1148	2P	1	
		Miscellaneous		
	VJBS00181	Timer Backup Capacitor P.C.B.	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Power Transistor C.B.A.		
		Transistor		
Q111	2SD1273		1	
		Pin Header		
P108	VJPS1149	3P	1	
		IR Receiving Detector C.B.A.		
		Integrated Circuit		
IC1	uPC1373H		1	
		Diode		
D1	PH302 or PN313		1	
		Resistors		
R1	ERD10TLJ102	1K	1	
R2	ERD10TLJ270	27	1	
R3	ERD10TLJ154	150K	1	
		Capacitors		
C1	ECEA1CK100	Electrolytic 16V 10	1	
C2	ECEA1EK4R7	Electrolytic 25V 4.7	1	
C3	ECEA1CK100	Electrolytic 16V 10	1	
C4	APSV100J472	Polyester 100V 0.0047	1	
C5	AMZV50K183	Polyester 50V 0.018	1	
C6	ECEA1CK470	Electrolytic 16V 47	1	
		Coil		
T1	ELM7Q206A		1	
		IR Transmitter C.B.A.		
		Integrated Circuit		
IC1	MN6028		1	
		Transistors		
Q1	2SD636(R,S)		1	
Q2	2SD638(R,S)		1	
Q3	2SD636(R,S)		1	
		Diodes		
D1,2	SE303A	L.E.D.	2	
D3	LN230RA	L.E.D.	1	
D4-7	MA165		4	
		Resistors		
R1	RED10TJ332	3.3K	1	
R2	ERD10TJ470	47	1	
R3	ERD10TJ223	22K	1	
R4	ERD25TJ1R0	1/4W	1	
R5	ERD10TJ221	220	1	
R6	ERD10TJ223	22K	1	

Ref. No.	Part No.	Part Name & Description	Pcs / Set	Remarks
		Capacitors		
C1,2	ECKF1H101KB	Ceramic 50V 100P	2	
C3	ECSF3E100	Tantalum 3V 100	1	
		Crystal Oscillator		
X1	CSB455EB1		1	
		Miscellaneous		
	VJBS00195	Transistor P.C.B.	1	
		ELECTRICAL PARTS LOCATED		
		ON CHASSIS		
	ENPD613	ANT Terminal	1	
	TEL302	Check Terminal	2	
	TEL302-5X	Check Terminal	2	
	TJE98101	Check Terminal	11	
	TJE98101	Check Terminal	6	
	TJE98101	Check Terminal	4	
	TJE98101	Check Terminal	4	
	TNV56751F2	Tuner	1	
	VEKS0721	Lug Ass'y	1	
	VEKS0749	Lug Ass'y	1	
	VJAS0024	AC Cord	1	
	VJSS0004	SP Socket	1	
	VKCS0004	Hinge	1	
	XYN3+P12FNS	Screw With Washer, 3x12	2	
F101	ETP66PUL7A	Power Transformer	1	
	VTPS0003	Power Transformer	1	